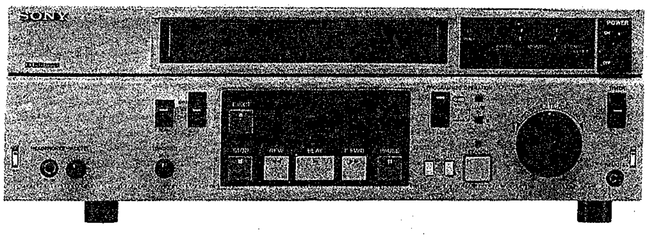
SONY®

VIDEOCASSETTE PLAYER

SVP-9020

SERVICE MANUAL



S-VHS 625

VHS
PAL

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About This Manual

This manual explains how to use the Sony SVP-9020 videocassette player. This section explains the purpose and organization of the manual. Reading this section first will help you decide which parts of the manual you should read first, depending on your experience of operating VTRs.

Purpose and intended readership

This manual contains the information you need to operate this player, including the names and functions of the component parts, details of settings and adjustments, and the procedures for playback.

This player is designed for use by a wide range of users, from cable television stations to general business operators. Likewise, this manual is aimed at the same wide range of users, from experienced engineers to those users who have never used this type of player before. If you find any unfamiliar terms while reading the manual, consult the footnotes at the bottom of the page as well as the glossary at the end of the manual.

Organization

The following is a brief summary of the chapters and appendixes constituting this manual. Note also that the opening page of each chapter gives a brief summary of the contents of the chapter.

Chapter 1, "SVP-9020 Introduction" describes the special features of the player.

Chapter 2, "Location and Function of Parts and Controls" explains the purposes and functions of the parts of the player.

If you have used a player before, you will be able to operate the player after briefly reading this chapter. If you have never used this type of player before, read through this chapter thoroughly to familiarize yourself with the parts and controls.

Refer to this chapter to clarify the functions of the controls while you are operating the player.

Chapter 3, "Before Using Your SVP-9020" explains necessary precautions and how to set up the player prior to operation.

Chapter 4, "Playback" explains playback, search and repeat, and timer playback.

Chapter 5, "Maintenance" explains troubleshooting, error messages and their meanings, and the cleaning of the video heads.

Appendixes

The appendixes contain the following sections:

- Menu Items and Their Functions
- Specifications
- Glossary

Index

Conventions

Procedure format

This type of figure shows the switches and controls used to achieve an operation. The numbers correspond to those in the figure that follows.

Technical terms

Technical terms are explained in the glossary of terms at the end of this manual.

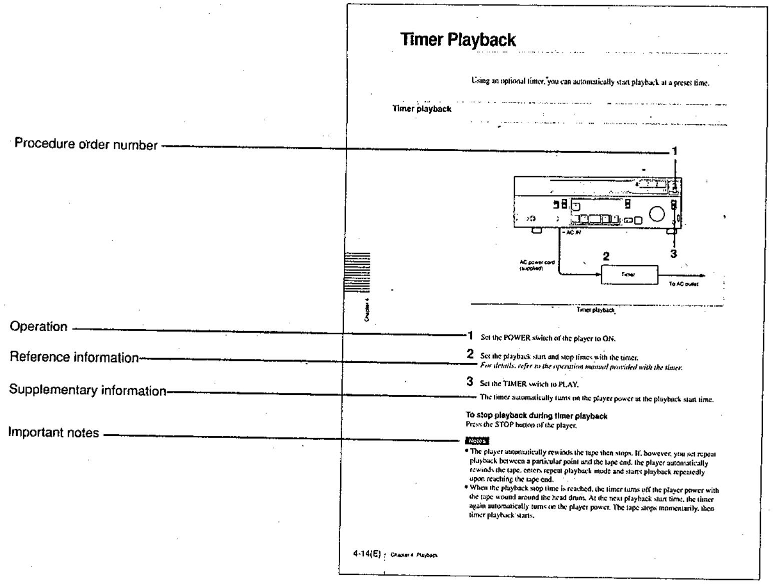
Reference information

Points you to another section of the manual where you can find additional information. Written in italics.

Important notes

Be sure to read the sections marked Note. They explain points that you should be aware of if you are to operate the player correctly and prevent malfunctions. Also read "Safety Precautions" and "Handling Precautions" on page 3-3(E).

About This Manual (Continued)



Timer Playback

Using an optional timer, you can automatically start playback at a preset time.

Timer playback

Timer playback

1 Set the POWER switch of the player to ON.

2 Set the playback start and stop times with the timer.
For details, refer to the operation manual provided with the timer.

3 Set the TIMER switch to PLAY.
The timer automatically turns on the player power at the playback start time.

To stop playback during timer playback
Press the STOP button of the player.

Notes

- The player automatically rewinds the tape then stops. If, however, you set repeat playback between a particular point and the tape end, the player automatically rewinds the tape, enters repeat playback mode and starts playback repeatedly upon reaching the tape end.
- When the playback stop time is reached, the timer turns off the player power with the tape wound around the head drum. At the next playback start time, the timer again automatically turns on the player power. The tape stops momentarily, then timer playback starts.

4-14(E) Chapter 4 Playback

Chapter 1
SVP-9020 Introduction

This chapter describes the special features of the player.

SVP-9020 Features ....1-3(E)
Suggested Configurations for Controlling the Player Using a Simple Editing Control Unit ....1-5(E)
Optional Accessories for Expanding the System ....1-6(E)

SVP-9020 Features

The player has the following features.

High picture quality

S-VHS format
This player uses the S-VHS format. This provides a high-quality color pictures with a resolution of more than 400 lines.

Wide track design
The playback devices of this player incorporate a 58 µm track design to enable stable sound and pictures.

Digital comb filter
This player uses a digital comb filter to separate the composite video signal into Y and C signal. This enables sharp picture definition.

YX filter
This player also uses a YX filter to reduce cross-color (where one color mixes with another) or beat (diagonal stripes).

High sound quality

Hi-fi audio playback (four-channel audio signal playback)
This player provides high-quality sound playback. You can select palyback of the normal audio channel, or of the hi-fi audio channel.

High reliability

Direct-drive reel motors
This player employs two direct-drive reel motors. A highly rigid material is used for the lower drum to prolong its service life. In addition, the beltless mechanism offers high reliability.

Wide range of functions

LED time counter
The time counter displays the control (CTL) signals recorded onto a tape to indicate the tape running time in hours, minutes and seconds.

High-speed picture search

This player supports high-speed picture search with a search dial. Recognizable color pictures at speeds ranging from 1/20 to 10 times normal speed are available in search mode. This facility allows any desired point on the tape to be located quickly.

Programmed operation

Programmed operation allows you to locate specified points on a tape and to automatically repeat a desired portion.

Timer playback

By setting the TIMER selector to PLAY, the player plays back when the power is automatically turned on.

Menu function

The menu function allows settings to be made easily by using the buttons on the front panel.

Playback of dual color systems

This player can play back both PAL- and NTSC-recorded signals through SYSTEM SELECT switch setting. The NTSC-recorded signals are played back based on the NTSC$_{4.43}$ system.

Auto head cleaner

Each time the player starts and ends playback, a cleaning roller automatically passes over the video/FM audio (rotary) heads, removing tape residue and enabling preventive care of the tape heads.

Automatic cassette ejection at tape end

When a tape reaches its end, the player automatically ejects the cassette. This prevents accidental erasure of valuable data. Automatic tape ejection can be inhibited through menu operation.

Connectors

External SYNC IN connector

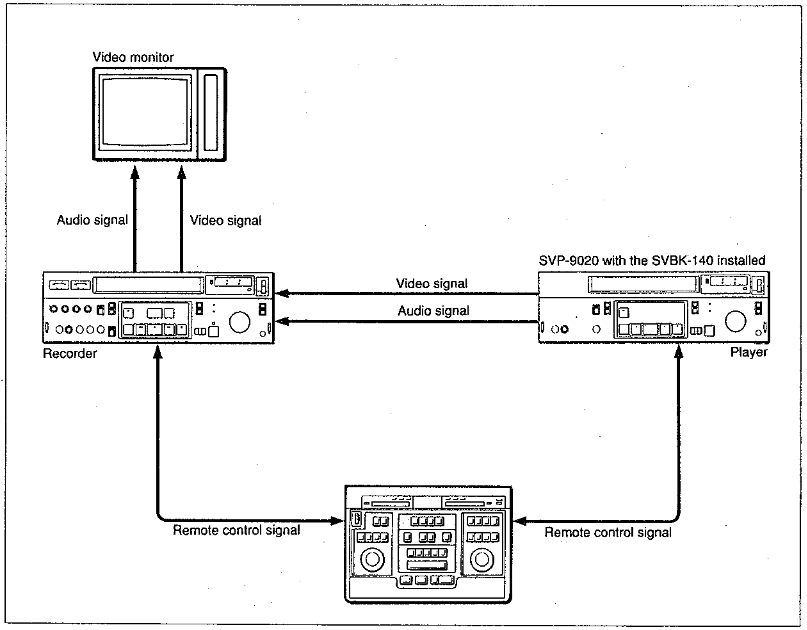
The SYNC IN connector enables the player to be synchronized with other video equipment.

8-pin VTR connector

The TV OUT connector allows the player to simultaneously monitor video and audio signals by connecting an external monitor with a single cable.

Suggested Configurations for Controlling the Player Using a Simple Editing Control Unit

The following configuration is suggested for controlling the SVP-9020 with the optional SVBK-140 RS-422A interface board and other video equipment by using the RM-450CE editing control unit.



Suggested configurations for controlling the player using a simple editing control unit

Optional Accessories for Expanding the System

The following accessories can be used to enhance the player.

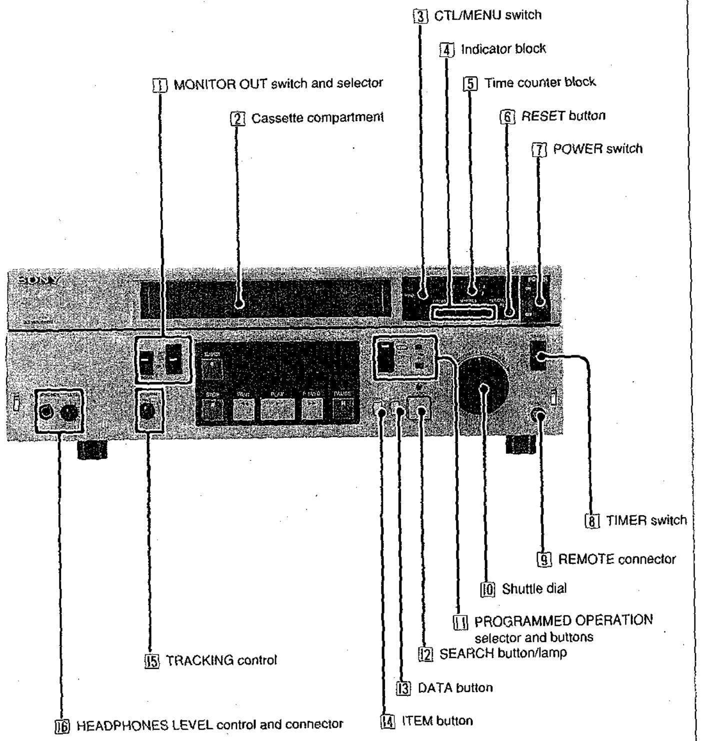
Model name	Function
SVRM-100 Remote control unit	This unit enables remote control of the player by connecting the unit to the REMOTE connector of the player. But, the following buttons do not function in this configuration. • FREEZE button • REC button • INDEX button • MARK button • ERASE button
SVBK-100 33-pin interface board	This board provides a 33-pin parallel interface that enables the player to be connected to a remote control unit (RM-580/500/450CE/440 etc.) employing a 33-pin parallel interface board. You can thus control the player from the remote control unit. (However, the editing function of the RM-450CE/440 does not operate.)
SVBK-120 RS-232C interface board	This board provides an RS-232C serial interface that allows a computer to be connected. You can thus control the player from a computer.
SVBK-130 Satellite interface board (available soon)	This board provides a satellite interface. You can use this board to construct a satellite system.
SVBK-140 RS-422A interface board	This board provides an RS-422A serial interface that allows the RM-450CE editing control unit to be connected. You can thus control the player from this editing control unit.
SVBK-150 Digital noise reduction board	This board reduces digital chroma noise and corrects time base errors to increase picture sharpness, reduce jitter, and reduce color drop out interpolation.
SVBK-160 Time code board	This board reads and generates time codes. When you want to play back a tape onto which time codes have been recorded, use this board with the SVBK-130 or SVBK-140 because this board can not function without them. For details, refer to the operation manual supplied with the SVBK-160 or contact your Sony dealer.

Chapter 2
Location and Function of Parts and Controls

This chapter explains the purposes and functions of the parts of the player.
If you have used a player before, you should be able to operate the player after briefly reading this chapter. If you have never used this type of player before, read through this chapter thoroughly to familiarize yourself with the parts and controls. While you are operating the player, refer to this chapter to clarify the functions of the controls.

Front Panel .... 2-3(E)
Sub Panel .... 2-7(E)
Rear Panel .... 2-9(E)

Front Panel


1 MONITOR OUT switch and selector
2 Cassette compartment
3 CTL/MENU switch
4 Indicator block
5 Time counter block
6 RESET button
7 POWER switch
8 TIMER switch
9 REMOTE connector
10 Shuttle dial
11 PROGRAMMED OPERATION selector and buttons
12 SEARCH button/lamp
13 DATA button
14 ITEM button
15 TRACKING control
16 HEADPHONES LEVEL control and connector

Front panel

Front Panel (Continued)

[1] MONITOR OUT switch and selector Hi-Fi/NORM switch

This switch is used to select the audio output signal to be output to the AUDIO MONITOR connector on the rear panel.

Hi-Fi: When the player is playing back a signal, an output audio signal, recorded in hi-fi recording mode is output to the HEADPHONES connector, AUDIO MONITOR connector and TV OUT connector.

NORM: When the player is playing back a signal, the output audio signals, recorded in normal recording mode are output to the HEADPHONES connector, AUDIO MONITOR connector and TV OUT connectors.

CH-1/MIX/CH-2 selector

This selector is used to select the channel to be output through the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connector. It can also be used to select the channel to which the player outputs the audio signal set with the Hi-Fi/NORM switch [1].

CH-1/MIX/CH-2 selector setting	Audio signal output from HEADPHONES connector	Audio signal output from AUDIO MONITOR connector and TV OUT connector
CH-1	channel-1	channel-1
MIX	stereo audio signal	mixed from channel-1 and channel-2
CH-2	channel-2	channel-2

[2] Cassette compartment

Insert an S-VHS or VHS cassette here.

[3] CTL/MENU(control signal/menu) switch

This switch selects the data to be displayed by the time counter block [5].

CTL: reads CTL signals on the tape and displays the tape transport time in hours, minutes and seconds. Normally, keep the switch set to this position.

MENU: Displays menu settings in STOP mode. No other operations are possible in menu mode.

[4] Indicator block

Each lamp lights in the following cases:

▭ lamp: lights when a cassette is loaded into the player.

AUTO OFF lamp: lights when the power is applied but moisture has condensed inside the player. While this indicator is lit, a cassette can not be loaded into the player.

S-VHS lamp: lights when the player is S-VHS playback mode.

[5] Time counter block

This block displays the data (time or the menu items) selected with the CTL/MENU switch [3].

[6] RESET button

Setting the CTL/MENU switch [3] to CTL causes the tape transport time to appear on the time counter block [5]. Pressing this button resets the indicator to "0:00:00."

[7] POWER switch

This switch turns on the power of the player. The time counter block [5] will light.

[8] TIMER switch

This switch is used to enable automatic playback with an optional timer.

OFF: no timer is used. Normally, keep the selector set to this position.

PLAY: automatic playback with a timer.

[9] REMOTE connector (stereo minijack)

This connector is used to connect the optional SVRM-100 remote control unit. Playback, fast-forward, rewind and search operations can be remotely controlled.

[10] Shuttle dial

By turning this dial with the SEARCH button [12] held down, the playback speed can be varied between 1/20 and 10 times normal speed. Turning the dial clockwise (to FORWARD) makes the tape run forwards. Turning the dial counterclockwise (to REVERSE) makes the tape run backwards. At the center "0" position, a still picture is output.

[11] PROGRAMMED OPERATION selector and buttons

This selector and buttons are used to enable programmed operation.

PROGRAMMED OPERATION selector

↻:

- To repeatedly play a particular portion.
- To check the points memorized with the MARK IN A and B buttons.

OFF:

- For normal operation. When the player is to be controlled from a remote control unit connected to the REMOTE connector, set this switch to OFF.
- To memorize points set with the MARK IN A and B buttons for programmed operation.

→|:

- To locate a point memorized with the MARK IN A button.
- To memorize points, set with the MARK IN A button, for programmed operation.

MARK IN A and B buttons

Press to memorize the current time counter value. You can memorize only one point with each button. If you press the button several times, only the last point will be memorized.

[12] SEARCH button/lamp

Press to activate the shuttle dial [10]. The lamp will light.

[13] DATA button

With the CTL/MENU switch [3] set to MENU, press this button to set the data item selected with the ITEM button [14].

[14] ITEM button

With the CTL/MENU switch [3] set to MENU, press this button to select the item to be set.

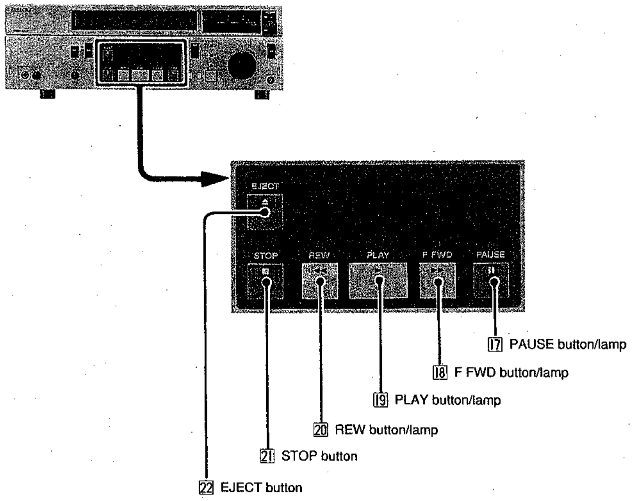
[15] TRACKING control

Normally, set this control to FIXED. Should noise, snow or streaks appear on a picture, turn this control so that the best possible picture is obtained.

[16] HEADPHONES LEVEL control and connector(stereo phone jack)

To monitor the playback audio signal selected with the MONITOR OUT switch and selector [1], connect a pair of stereo headphones here. Adjust the volume with the LEVEL control.

Front Panel (Continued)


EJECT
STOP
REW
PLAY
F FWD
PAUSE
17 PAUSE button/lamp
18 F FWD button/lamp
19 PLAY button/lamp
20 REW button/lamp
21 STOP button
22 EJECT button

Front panel (continued)

17 PAUSE button/lamp

Press to stop the tape momentarily. The lamp lights while the player is in STOP mode.
To restart the tape, press the PAUSE button again.

18 F FWD(fast-forward) button/lamp

Press to fast-forward the tape. The lamp lights during fast-forwarding.

19 PLAY(playback) button/lamp

Press to play back the tape. The lamp lights.

20 REW(rewind) button/lamp

Press to rewind the tape. The lamp lights while the player is rewinding the tape.

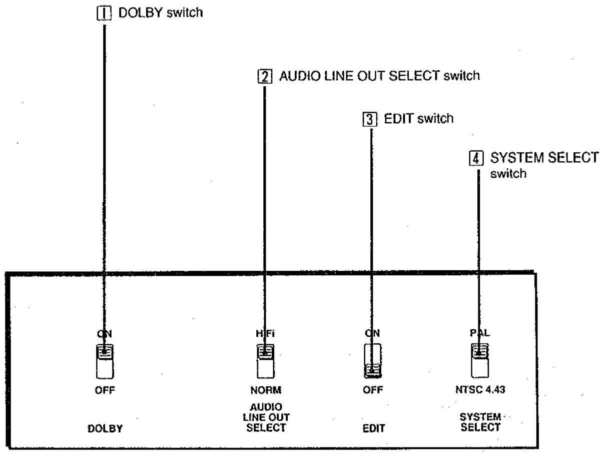
21 STOP button

Press to completely stop the tape transport.

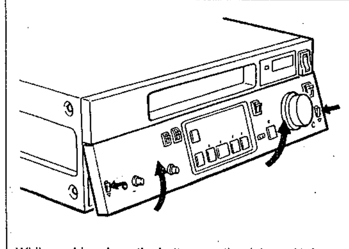
22 EJECT button

Press to eject the cassette.

Sub Panel

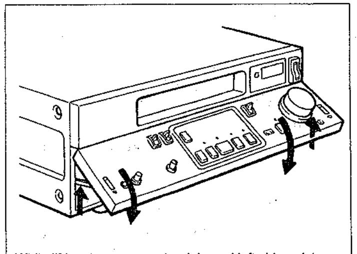

1 DOLBY switch
2 AUDIO LINE OUT SELECT switch
3 EDIT switch
4 SYSTEM SELECT switch
ON
OFF
DOLBY
HiFi
NORM
AUDIO LINE OUT SELECT
ON
OFF
EDIT
PAL
NTSC 4.43
SYSTEM SELECT

How to open the lower front panel



While pushing down the buttons on the right and left sides of the panel, pull the lower panel up.

How to close the lower front panel



While lifting the stays on the right and left sides of the panel, drop the lower panel down.

Sub panel

Sub Panel (Continued)

1 DOLBY switch

This switch is used to select whether the Dolby1) system is applied to playback. This system provides a high S/N ratio and improves sound quality.

ON: plays back the sound with the Dolby system.

OFF: plays back the sound without the Dolby system.

Note

Be sure to make the same selection when recording and playing back. If the DOLBY switch is set to OFF when the player is playing back a signal recorded with the Dolby system, high sound levels may be emphasized.

2 AUDIO LINE OUT SELECT switch

This switch is used to select the audio signal to be output from the AUDIO OUT NORM/Hi-Fi connectors on the rear panel.

HiFi: outputs a hi-fi recording signal.

NORM: outputs a normal recording signal.

Note

The hi-fi recording signal is output from the AUDIO OUT Hi-Fi connector, regardless of how this switch is set.

3 EDIT switch

Set this switch to ON when duplicating a signal. This will prevent degradation of the video signal.

ON: Duplicating the signal

OFF: Normal operation

4 SYSTEM SELECT switch

This switch is used to select the color system of video signals to be played back.

PAL: To play back PAL-recorded signals. Normally, set this switch to this position.

NTSC 4.43: To play back NTSC-recorded signals using a monitor which can display signals of multiple color systems, such as Sony PVM-1442QM.

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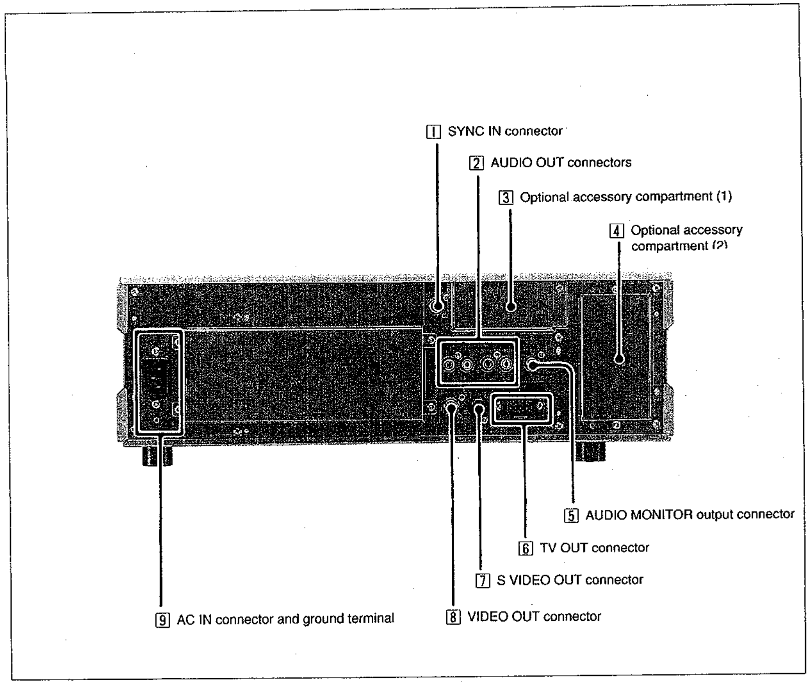
1) Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

Rear Panel

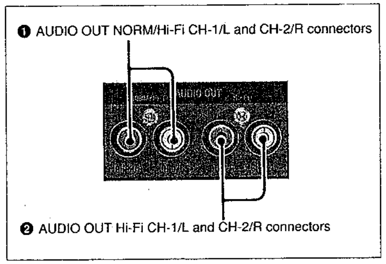

1 SYNC IN connector
2 AUDIO OUT connectors
3 Optional accessory compartment (1)
4 Optional accessory compartment (2)
5 AUDIO MONITOR output connector
6 TV OUT connector
7 S VIDEO OUT connector
8 VIDEO OUT connector
9 AC IN connector and ground terminal

Rear panel

1 SYNC IN(synchronizing signal input) connector (BNC type)

Used to input an external synchronizing signal.

2 AUDIO OUT(output) connectors


❶ AUDIO OUT NORM/Hi-Fi CH-1/L and CH-2/R connectors
AUDIO OUT
❷ AUDIO OUT Hi-Fi CH-1/L and CH-2/R connectors

AUDIO OUT connectors

❶ AUDIO OUT(output) NORM/Hi-Fi CH-1/L(channel 1/left) and CH-2/R(channel 2/right) connectors (phono jacks)

Used to output the hi-fi recording or normal recording audio output signals, selected with the AUDIO LINE OUT SELECT switch on the sub panel.

❷ AUDIO OUT(output) Hi-Fi CH-1/L(channel 1/left) and CH-2/R(channel 2/right) connectors (phono jacks)

Used to output the hi-fi recording audio output signal.

Rear Panel (Continued)

[3] Optional accessory compartment (1)
This compartment is used to install the SVBK-100 or SVBK-120.

Note

Nothing can be installed here when optional accessory compartment (2) [4] is being used.

[4] Optional accessory compartment (2)
This compartment is used to install the SVBK-130 or SVBK-140.

Note

Nothing can be installed here when optional accessory compartment (1) [3] is being used.

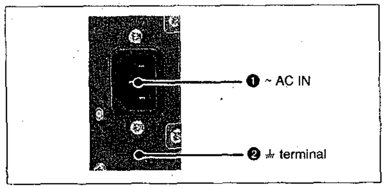
[5] AUDIO MONITOR output connector (phono jack)
Used to output the audio signal selected with the MONITOR OUT CH-1/MIX/CH-2 selector on the front panel.

[6] TV OUT (output) connector (8-pin)
Used to output the video and audio signal to a video monitor having an 8-pin VTR connector. The audio signal recorded onto the channel selected with the MONITOR OUT selector is output.

[7] S VIDEO OUT (output) connector (4-pin mini DIN)
Used to output the Y and C signals separately.

[8] VIDEO OUT (output) connector (BNC type)
Used to output a composite video signal.

[9] AC IN(input) connector and ground terminal



AC IN connector and ground terminal

❶ **~ AC IN:** Used to connect the player to an AC power outlet with the supplied AC power cord.
❷ **⏚ (ground) terminal:** Used to connect a ground line.

Chapter 3
Before Using Your SVP-9020

This chapter explains how to set up the player. You should be familiar with the contents of this chapter before attempting to operate the player.

Precautions .... **3-3(E)**
  Safety Precautions .... 3-3(E)
  Handling Precautions .... 3-3(E)
Connections .... **3-5(E)**
  Connecting Other Video Equipment .... 3-5(E)
  Controlling the Player with a Remote Control Unit ...... 3-6(E)
Handling Cassettes .... **3-7(E)**
  Compatible Cassetttes .... 3-7(E)
  Notes on Handling and Storing Cassettes. .... 3-8(E)
  Inserting a Cassette .... 3-8(E)
  Ejecting a Cassette .... 3-9(E)

Precautions

Safety Precautions

Power supply

- Connect the player to a 220 to 240 V AC power outlet.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the player with a damaged power cord.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.

Do not open the cabinet

Opening the cabinet may damage precision components or result in electric shock.

Keep foreign objects out of the cabinet

Dropping flammable or metal objects into the cabinet, or spilling liquids near the player can result in serious accidents.

In case of trouble

If you notice an unusual sound, smell or smoke, turn off the power immediately, disconnect the power supply and contact your Sony dealer.

Handling Precautions

Location

Do not store or use the player under any of the following conditions:

- In excessive heat or cold (permissible temperature range: 5°C to 40°C (41°F to 104°F))
- In direct sunlight or near heaters. Remember that the temperature inside a locked automobile in summer can rise as high as 50°C (122°F).
- In damp or dusty locations
- In locations subject to vibration
- Near strong magnetic fields
- Near televisions or equipment generating strong radio frequency energy

Orientation

The player is designed to be operated horizontally. Never operate the player vertically or incline it more than 20 degrees.

Protect the player from impact

Do not drop the player or subject it to severe shocks.

Keep the player well ventilated

To prevent the temperature from rising inside the player, keep the player uncovered and well ventilated while it is operating.

Precautions (Continued)

Maintenance

Clean the cabinet and panels by wiping with a soft, dry cloth.

For stubborn stains, moisten the cloth with a small amount of neutral solvent, and finish by wiping with a dry cloth. Do not use alcohol, benzine, thinners or volatile liquids, as these may discolor or damage the cabinet surface.

Transporting

- Remove any cassette from the cassette compartment.
- Protect the player from impact by transporting it in its original carton or a protective case.

Moisture condensation

When the player is moved directly from a cold place to a warm place, or when the player is operated in a location having a high humidity, moisture may condense inside the player. If the tape is used under this condition, it may adhere to the head drum or the tape guide, causing damage. To prevent this, the player is equipped with a moisture detector. The AUTO OFF lamp lights to indicate that moisture has been detected inside the player. When this lamp is lit, cassettes are automatically ejected. If a cassette is inserted, the player does not function, even if a function button is pressed.

Note

When the player is first moved to a location where condensation is liable to form, we recommend that you wait for about ten minutes for the player to warm up and keep the power on so that the moisture detector will operate.

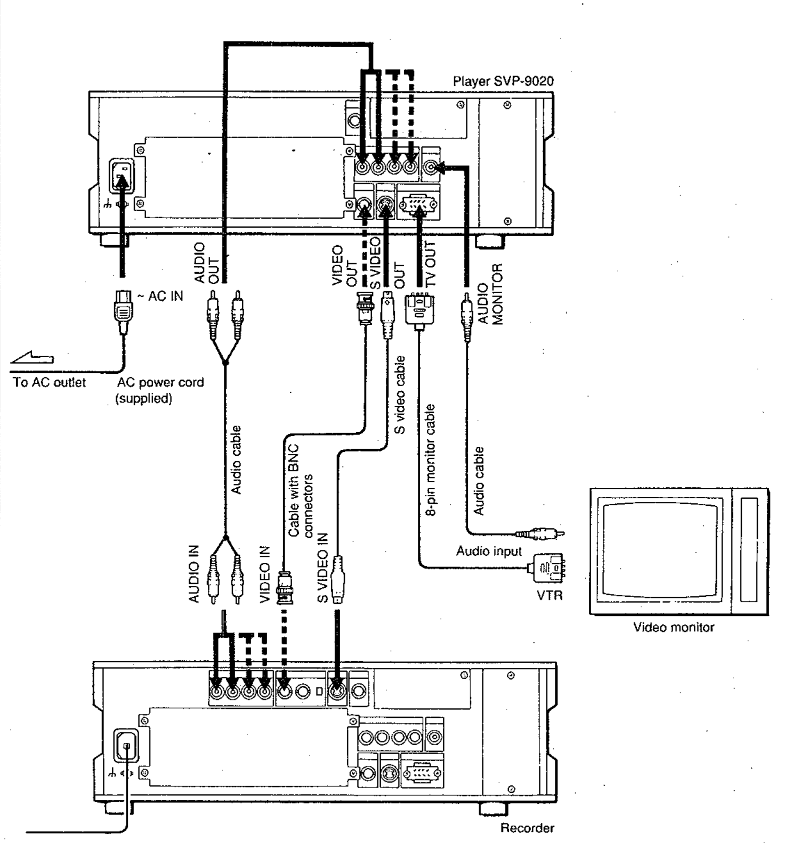
Connections

The following examples illustrate how to connect equipment using this player.

- Connecting other video equipment
- Controlling the player with a remote control unit

Connecting Other Video Equipment

The following example shows how to make the connection necessary to output video signals into recorder so that signals can be recorded with the recorder.

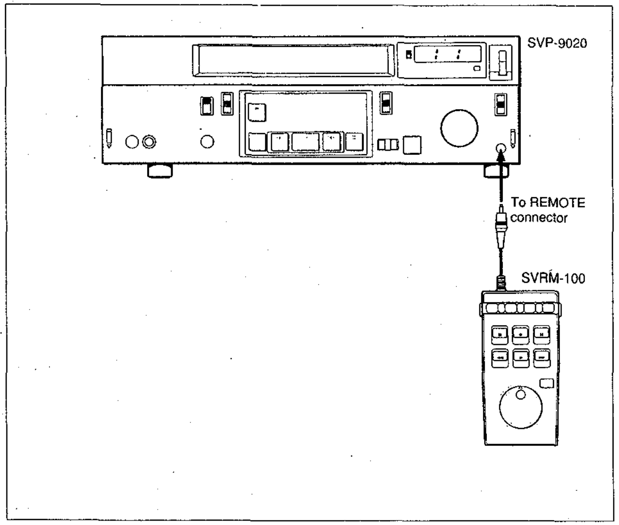

Player SVP-9020
AUDIO OUT
VIDEO OUT
S VIDEO OUT
TV OUT
AUDIO MONITOR
~ AC IN
To AC outlet
AC power cord (supplied)
Audio cable
Cable with BNC connectors
S video cable
8-pin monitor cable
Audio cable
Audio input
VTR
Video monitor
AUDIO IN
VIDEO IN
S VIDEO IN
Recorder

Connecting other video equipment

Controlling the Player with a Remote Control Unit

The connections necessary to enable remote control of the player with the SVRM-100 remote control unit are as follows. The SVRM-100 can be used to control the player to which it is connected. But, the following buttons, of SVRM-100 do not function.

- FREEZE button
- REC button
- INDEX button
- MARK button
- ERASE button



Controlling the player with a remote control unit

Handling Cassettes

Compatible Cassettes

Use S-VHS or VHS tapes with the player. The type numbers and playback times of the cassettes that can be used with this player are listed in the following chart.

S-VHS tape

Type number	Playback time (minutes)
MQSE-30	30
MQSE-60	60
MQSE-120	120

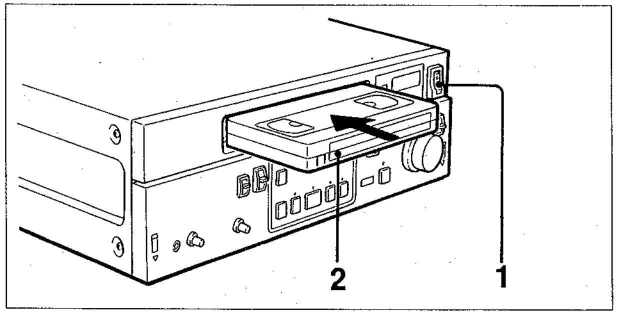
VHS tape (High-Grade type)

Type number	Playback time (minutes)
E-30PM	30
E-60PM	60
E-120PM	120

Notes on Handling and Storing Cassettes

- Do not store cassettes in locations subject to direct sunlight, high humidity or excessive dust, or near heat sources, air ducts or in magnetic fields.
- After use, rewind the tape onto the supply reel to avoid damage to the tape.
- Store the cassette in its case and keep it vertical position.
- Do not drop a cassette and avoid subjecting it to mechanical shock.

Inserting a Cassette



Inserting a cassette

1 Turn the power on.

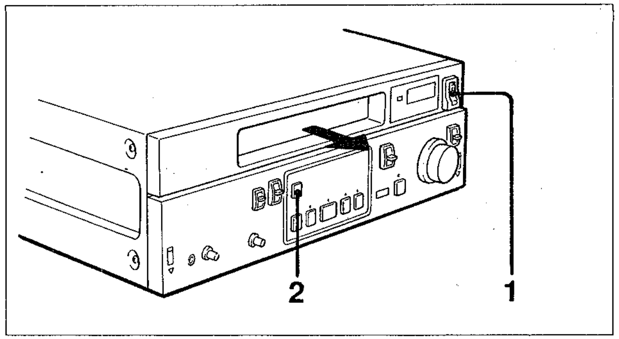
2 Fully insert the cassette into the cassette compartment.

The cassette is automatically pulled into the operating position.

Notes

- Insert the cassette straight into the entrance of the compartment.
- Insert the cassette with its label side up.
- The labels on the cassette should be firmly attached. If they become detached inside the player, you may not be able to eject the cassette.

Ejecting a Cassette



Ejecting a cassette

1 Make sure that the power is turned on.

2 Press the EJECT button.

Caution

Do not attempt to eject a cassette while your fingers are in the cassette compartment.

Chapter 4
Playback

This chapter explains playback, how to locate a desired point, how to repeat playback of a portion, and timer playback.

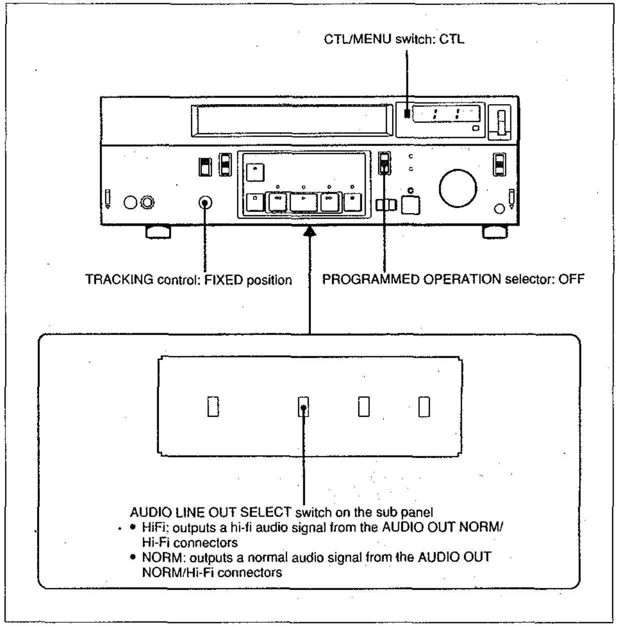
Pre-playback Preparation .... 4-3(E)
  Pre-playback Setting .... 4-3(E)
  Setting the Still Time .... 4-5(E)
Playback .... 4-6(E)
Repeated Playback of a Desired Portion .... 4-8(E)
Locating a Desired Point .... 4-11(E)
Timer Playback .... 4-14(E)

Pre-playback Preparation

Pre-playback Setting

Checking the switch settings

To prepare for playback, set the selector, control, and switch as follows.


CTL/MENU switch: CTL
TRACKING control: FIXED position
PROGRAMMED OPERATION selector: OFF
AUDIO LINE OUT SELECT switch on the sub panel
• HiFi: outputs a hi-fi audio signal from the AUDIO OUT NORM/Hi-Fi connectors
• NORM: outputs a normal audio signal from the AUDIO OUT NORM/Hi-Fi connectors

Setting the selector, control and switch

Pre-playback Preparation (Continued)

Selecting the audio signal to be monitored

You can monitor the sound. The sound is output from the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connector. Select the sound to be monitored with the MONITOR OUT Hi-Fi/NORM switch and the CH-1/MIX/CH-2 selector. If you set the CH-1/MIX/CH-2 selector to MIX, stereo sound is output from the HEADPHONES connector and mixed sound for channel-1 and channel-2 is output from AUDIO MONITOR connector.

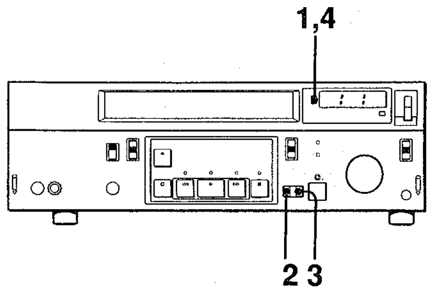
Note

You can not select which signal is output from the AUDIO OUT connector.

Sound to be monitored	Channel to be monitored	MONITOR OUT Hi-Fi/NORM switch setting	CH-1/MIX/CH-2 selector setting
Hi-fi sound	Channel-1	Hi-Fi	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2
Normal sound	Channel-1	NORM	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2

Setting the Still Time

If the pause mode is held for more than about 5 minutes, the tape around the head drum automatically slackens to protect the video head and the tape (factory setting). This is called "long pause mode." You can set the still time from the menu. Change the time as follows.



Setting the still time

1. Set the CTL/MENU switch to MENU.

   The settable menu items appear on the time counter block.

2. Press the ITEM button repeatedly until "Stt-**" appears.

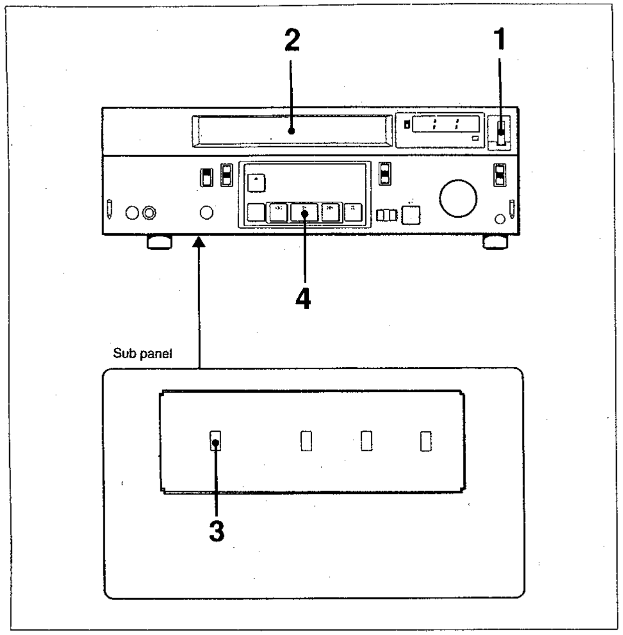
3. Press the DATA button repeatedly to display the desired still time.

Display	Still time
Stt-5	5 minutes
Stt-1	1 minute
Stt-10	10 seconds
Stt- 2	2 seconds

4. Set the CTL/MENU switch to CTL.

   The long pause time item displayed in step 3 is set.

Playback



Playback

1. Set the POWER switch to ON.

2. Insert a cassette into the cassette compartment.

3. To play back the audio signal that has been recorded on the audio track using the Dolby NR system, set the DOLBY switch on the sub panel.
   ON: plays back the audio signal with the Dolby NR system.
   OFF: plays back the audio signal without the Dolby NR system.

4. Press the PLAY button.

   The player starts playing back.
   At tape end, the player automatically rewinds the tape then stops.

To stop the tape momentarily

Press the PAUSE button.
The tape stops and the video monitor displays a still picture.
To resume playback, press the PAUSE button again.

Note

If the tape is paused for longer than the time set from the menu, the still picture disappears from the monitor and the player enters long pause mode. To release long pause mode, press the PAUSE button again. The player immediately resumes playback.

To stop playback

Press the STOP button.

If snow or streaks appear on the picture

When the player plays back a signal, noise, snow or streaks may appear because of a tracking error. To overcome this, slowly turn the TRACKING control so that the best possible picture is obtained.

Note

After playing back this tape, reset the TRACKING control to FIXED.

To play back signals recorded in the NTSC color system

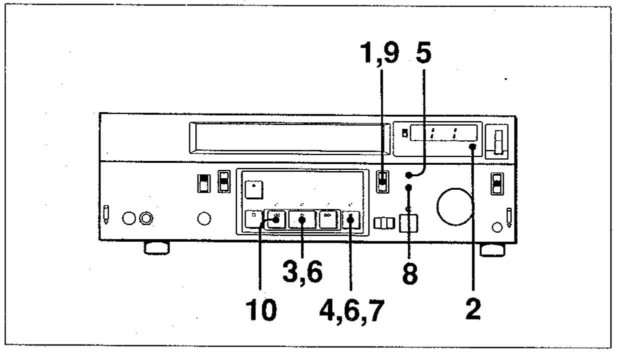
Set the SYSTEM SELECT switch on the sub panel to NTSC 4.43.
To monitor the signal, use a monitor which can display signals of multiple color systems.
The NTSC-recorded signals are played back based on the NTSC$_{4.43}$ system.

Repeated Playback of a Desired Portion

You can repeatedly play back a desired portion using the MARK IN A and B buttons and the PROGRAMMED OPERATION selector.

Three types of repeat playback are supported:
- Repeat playback of a desired portion
- Repeat playback between the beginning of the tape and a particular point
- Repeat playback between a particular point and the tape end

Repeat playback of a desired portion



Repeat playback of a desired portion

1. Set the PROGRAMMED OPERATION selector to OFF.
2. Press the RESET button.

   The memorized points are erased.
3. Press the PLAY button.

   The player starts playing back.

To repeat the portion between the beginning of the tape and a particular point, go to step 7.

4. Press the PAUSE button at the point where you want playback to start. To locate the desired point precisely, use the shuttle dial.
   For details, see " Locating a desired point" on page 4-11(E).
5. Press the MARK IN A button.

   The player memorizes the repeat start point (point A).

6. Press the PLAY button or PAUSE button.

   The tape restarts playback.

To repeat the portion between a particular point and the tape end, go to step 9.

7. Press the PAUSE button at the point where you want to playback to stop. To locate the desired point precisely, use the shuttle dial.
   For details, see "Locating a desired point" on page 4-11(E).
8. Press the MARK IN B button.

   The player memorizes the repeat stopping point (point B).
9. Set the PROGRAMMED OPERATION selector to ⟲.
10. Press the REW button.

    The player rewinds the tape and starts repeat playback.

To stop repeat playback

Press the STOP button.

After finishing repeat playback

Reset the PROGRAMMED OPERATION selector to OFF.

To check memorized points A and B

1. Press the STOP button.
2. Set the PROGRAMMED OPERATION selector to ⟲.
3. Press the MARK IN A or MARK IN B button.

   Each memorized point will appear on the time counter while the respective button is held down.

To check the time between two particular points specified for repeat playback

1 Press the STOP button.

2 Set the PROGRAMMED OPERATION selector to ⇄.

3 Press the MARK IN A and MARK IN B buttons simultaneously.

The time between the specified points will appear on the time counter while the buttons are held down.

Notes

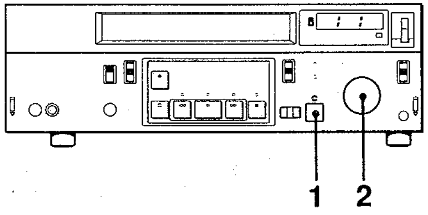
- When the RESET button is pressed while the PROGRAMMED OPERATION selector is set to OFF or ·ᴬ·, data is erased from memory and "0:00:00" is set for both buttons.
- The most recently set values for the MARK IN A and B buttons, as well as the most recently set time counter value are maintained, even if the power is turned off. If, however, you perform a memorizing operation and turn off the power within 15 seconds of the power being turned on, the newly registered data will be lost.
- You can memorize only one point for each MARK IN A or B button. If the button is pressed several times, only the last point will be memorized.

Locating a Desired Point

There are two ways of locating a desired point:

- To locate a desired point using the shuttle dial
- To quickly return to a desired point

To locate a desired point using the shuttle dial



To locate a desired point using the shuttle dial

1 Press the SEARCH button.

The monitor displays a still picture.

2 Turn the shuttle dial:
FORWARD(clockwise): to play back in the normal direction.
REVERSE(counterclockwise): to play back in the reverse direction.

The playback speed can be varied between ±1/20 and ±10 times normal speed, according to the angle of rotation of the dial. The monitor displays a still picture while the dial is set to the center position.

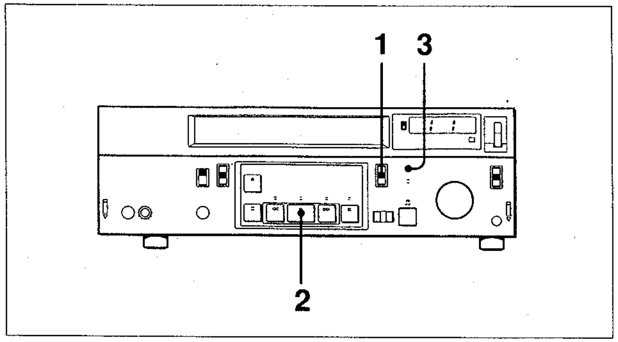
To stop a search operation
Press STOP or one of the other tape transport buttons.

To resume playback
Press the PLAY button.

Locating a Desired Point (Continued)

To quickly return to a desired point

To memorize a desired point



To memorize a desired point

1 Set the PROGRAMMED OPERATION selector to OFF.

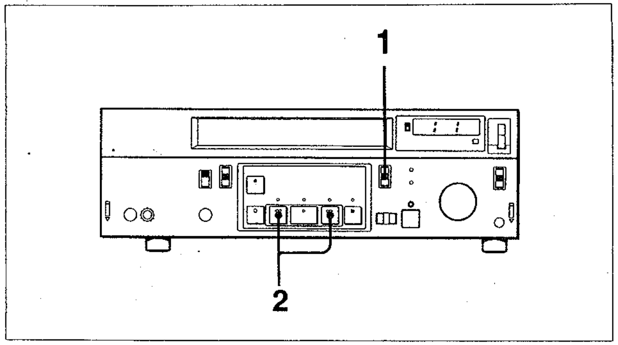
2 Press the PLAY button.

The player starts playing back.

3 Press the MARK IN A button at the point to which you want to rewind.

The player memorizes the point (point A).

To quickly return to a desired point



To quickly return to a desired point

1 Set the PROGRAMMED OPERATION selector to →|←.

2 **When the desired point is prior to the current tape position,** press the REW button or turn the shuttle dial counterclockwise (REVERSE).
When the desired point is subsequent to the current tape position, press the F FWD button or turn the shuttle dial clockwise (FORWARD).

The player starts searching for the point memorized for the MARK IN A button.

To resume playback
Return the PROGRAMMED OPERATION selector to OFF.

To check the desired point

1 Press the STOP button.

2 Set the PROGRAMMED OPERATION selector to ⇄.

3 Press the MARK IN A button.

The memorized point appears on the time counter while the button is held down.

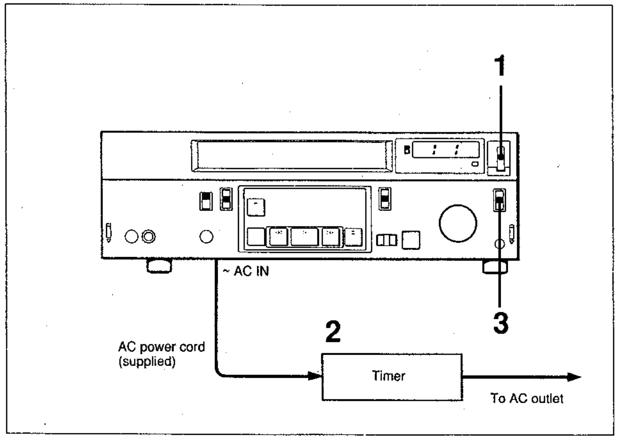
Notes

- If the button is pressed several times, only the last point will be memorized. When the RESET button is pressed with the PROGRAMMED OPERATION selector set to OFF or →|← , all data is erased from memory and "0:00:00" is set for both buttons.
- The most recently set values for the MARK IN A and B buttons and the most recent time counter value are held in memory even if the power is turned off. If, however, you perform a memorizing operation and turn off the power within 15 seconds of the power being turned on, the newly registered data will be lost.
- You can memorize only one point for each MARK IN A or B button.

Timer Playback

Using an optional timer, you can automatically start playback at a preset time.

Timer playback



Timer playback

1 Set the POWER switch of the player to ON.

2 Set the playback start and stop times with the timer.
For details, refer to the operation manual provided with the timer.

3 Set the TIMER switch to PLAY.

The timer automatically turns on the player power at the playback start time.

To stop playback during timer playback

Press the STOP button of the player.

Notes

- The player automatically rewinds the tape then stops. If, however, you set repeat playback between a particular point and the tape end, the player automatically rewinds the tape, enters repeat playback mode and starts playback repeatedly upon reaching the tape end.
- When the playback stop time is reached, the timer turns off the player power with the tape wound around the head drum. At the next playback start time, the timer again automatically turns on the player power. The tape stops momentarily, then timer playback starts.

Chapter 5
Maintenance

This chapter explains troubleshooting, error messages and their meanings, and cleaning the video heads.

Troubleshooting..5-3(E)
Error Messages and Their Meanings.............................5-4(E)
Cleaning the Video Heads ....5-5(E)

Troubleshooting

Should you have a problem with your player, first check the three items in Check list 1 and then the appropriate items from Check list 2 or Check list 3.

CHECK LIST 1

- Check that the AC power cord is firmly connected. *(See page 2-10(E).)*
- Check that the POWER switch is set to ON. *(See page 2-4(E).)*
- Check the connections. *(See page 3-5(E).)*

CHECK LIST 2

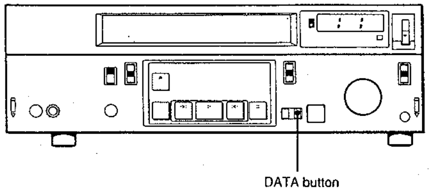
Symptoms	Possible causes and corrective actions	Reference page
AUTO OFF lamp lights and function buttons do not function.	Moisture has condensed inside the player. Keep the power on and wait until the lamp goes off. (This indicates that the moisture has evaporated.)	3-4(E)
The tape stops suddenly and no operation button functions.	Eject the cassette and take up the leader tape manually.	3-9(E)
The cassette cannot be ejected.	Turn off the player and consult your Sony dealer.	3-9(E)

CHECK LIST 3

Symptoms	Possible causes and corrective actions	Reference page
A cassette cannot be inserted.	Insert the cassette correctly. Check whether another cassette has already been inserted. Check whether the AUTO OFF lamp is lit.	3-8(E)
The tape transport does not operate when any of the operation buttons is pressed.	Check that the PROGRAMMED OPERATION selector is set to OFF.	2-5(E)
Snow or streaks appear on the playback picture.	Set the TRACKING control to the FIXED position. Clean the video head. Check that the EDIT switch is set to OFF.	2-5(E) 2-8(E) 5-5(E)
The playback picture does not appear.	Check that the setting of the SYSTEM SELECT switch is correct. Check that the video monitor conforms to the color system of a tape being played back.	2-8(E)

Error Messages and Their Meanings

The SVP-9020 features self-diagnostics. When a problem is detected, an error message appears in the time counter block on the front panel. The error messages that may appear are explained.



Note

If an error message appears, turn off the power and contact your Sony dealer.

Error code	Sub error code	Meaning
Err-01	—	Reel motor clockwise rotation error
Err-02	—	Tape slack
Err-03	—	Capstan motor error
Err-04	—	Drum motor error
Err-05	06 07 09 0A	Abnormal reel rotation
Err-20	02 03 05 06 30	Loading error Unloading error Cassette compartment error Reel motor error Servo lock error
Err-22	—	Interface I/O error
Err-23	—	Tape transport error
Err-30	—	Sensor error
Err-31	—	Sensor error
Err-32	—	Sensor error
Err-90	01 02 00	Tape transport error

Cleaning the Video Heads

Cleaning the video heads

If the picture temporarily disappears or if snow or noise appears on the picture, the video heads may be contaminated and should be cleaned. Use the optional T-25CL cleaning cassette to perform cleaning as follows. *For details, refer to the operation manual supplied with the cleaning cassette.*

1. Remove the cassette being played.
2. Insert the cleaning cassette.
3. Press the PLAY button.
4. Let the cleaning cassette run for about 10 seconds. Then press the STOP button.
5. Press the EJECT button to remove the cleaning cassette.

Notes

- Remove the cleaning cassette immediately to prevent damage to the video head.
- Do not use the cleaning cassette for more than 10 seconds at a time. Excessive use of the cleaning cassette will shorten the life of the heads.
- Do not rewind the cleaning cassette every time it is used. Run the tape to its end, then rewind it.
- You can run through a cleaning cassette four or five times. If used more than five times, the cleaning effect will lessen.
- Do not use a commercially available wet type cleaning cassette. Wet cleaners may damage the video heads.

Replacing the video heads

If picture quality is still inadequate after cleaning, the video heads may require replacement. The life of the heads is approximately 500 to 1000 hours of use. With this player, the accumulated operation time of the heads can be checked as follows.

1. Set the PROGRAMMED OPERATION selector to $_{B}{\circlearrowleft}^{A}$.
2. Hold down the RESET button for about two seconds.

   The total accumulated operation time of the head drum appears on the counter in units of hours.

Note

For head replacement, consult your Sony dealer.

Appendixes

Menu Items and Their Functions .... A-3(E)
Specifications .... A-5(E)
Glossary .... A-9(E)

Menu Items and Their Functions

Summary of menu items and their functions

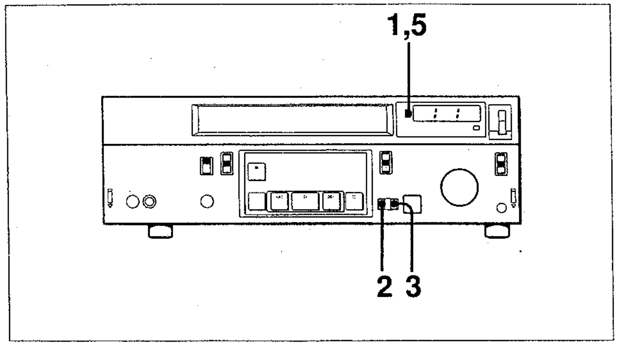
The player features the following four menu items. The boxed numbers in the Display column are the factory settings.

Item	Display	Set data
Still time	Stt $\boxed{-5}$ -1 -10 - 2	This item determines long pause mode time. **5:** 5 minutes **1:** 1 minute **10:** 10 seconds **2:** 2 seconds
Digital NR ON/OFF (Valid only when the SVBK-150 is installed in the SVP-9020)	dnr $\boxed{-On}$ -OF	**On:** Activates the digital noise reducer. **OF:** Deactivates the digital noise reducer.
Digital CNR ON/OFF (Valid only when the SVBK-150 is installed in the SVP-9020, and the "dnr-On" setting is made.)	Cnr $\boxed{-On}$ -OF	**On:** Activates the digital chroma noise reducer. **OF:** Deactivates the digital chroma noise reducer.
Digital YNR ON/OFF (Valid only when the SVBK-150 is installed in the SVP-9020, and the "dnr-On" setting is made.)	Ynr $\boxed{-On}$ -OF	**On:** Activates the digital luminance noise reducer. **OF:** Deactivates the digital luminance noise reducer,

Menu Items and Their Functions (Continued)

Setting menu operation

To change the operation mode of the player, use the menu as follows.



Setting menu operation

1 Set the CTL/MENU switch to MENU.

The items which can be set appear on the time counter block.

2 Press the ITEM button to select the item to be set.

3 Press the DATA button to set the data for the selected item.

4 Repeat steps 2 and 3 as necessary.

5 Set the CTL/MENU switch to CTL.

The data specified in steps 2 and 3 is set.

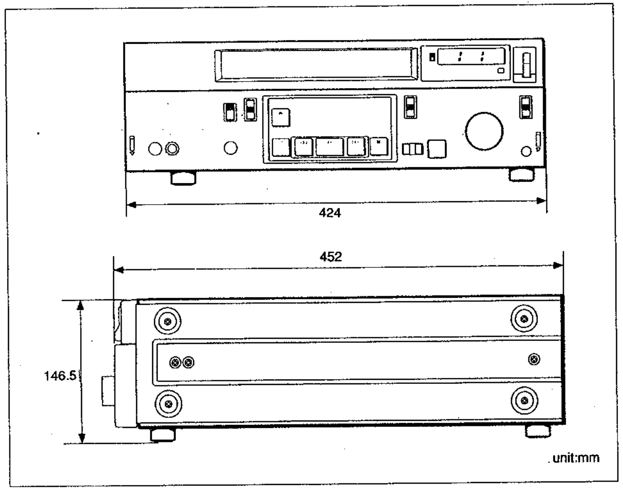
Note

If you set menu operation and turn off the power within 15 seconds of the power being turned on, however, the newly registered data will be lost.

Specifications

General

Power requirements	220 to 240 V AC, 50/60Hz
Power consumption	48 W
Operating orientation	Horizontal
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 × 146.5 × 452 mm (w/h/d) (16 $^3/_4$ × 5 $^7/_8$ × 17 $^7/_8$ inches) Excluding projecting parts and controls



Weight	Approx. 14 kg (30 lb 14 oz)

System

Signal system	PAL color signal, CCIR standard/NTSC$_{4.43}$ color signal, EIA standard
Playback system	Rotary 2-head azimuth playback, VHS format
Luminance	FM
Color playback system	Converted subcarrier direct playback

Specifications (Continued)

Tape transport

Tape speed	23.39 mm/sec.
Playback time	Approx. 120 minutes (E-120 cassette)
Fast-forward and rewind time	Within 2.5 minutes (E-120 cassette)
Tapes	VHS or S-VHS tapes
Search	Still, 1/20 to 10 times normal speed in both forward and reverse directions

Video

Outputs	VIDEO OUT (BNC type) × 1 Composite video signal: 1.0 ±0.2 Vp-p, 75 Ω, unbalanced, sync negative S VIDEO OUT (4-pin mini DIN) × 1 Luminance signal: 1.0 Vp-p, 75 Ω, unbalanced Color signal: 0.3 Vp-p, burst, 75 Ω, unbalanced TV OUT (8-pin multi) × 1 Composite signal: 1.0Vp-p, 75 Ω, sync negative
Horizontal resolution	More than 240 TV lines (VHS) More than 400 TV lines (S-VHS)
S/N	45 dB(color) (VHS) (Using SVO-9620 recorded tape)

Audio

Outputs	AUDIO OUT NORM/Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6 dBs (47 kΩ load), unbalanced AUDIO OUT Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6 dBs (47 kΩ load), unbalanced MONITOR OUT(phono jack) × 1 –5 dBs (47 kΩ load), unbalanced TV OUT (8-pin multi) × 1 –5 dBs (47 kΩ load), unbalanced HEADPHONES (stereo phone jack) × 1 –18 dBs to –48 dBs (8 Ω load), unbalanced
Tracks	4 tracks (Hifi:2, Normal:2)
S/N	43 dB (normal audio at 3% distortion) (Dolby off)
Frequency response	50 to 12,000 Hz(normal audio) 20 to 20,000 Hz(hi-fi audio)
Dynamic range	More than 90 dB(hi-fi audio)

Synchronism

Input	SYNC IN (BNC type) × 1 0.3 to 4Vp-p, 75 Ω, unbalanced, sync negative

---

0dBs=0.775V

Specifications (Continued)

Supplied accessories

AC power cord(1)
Operating instructions(1)

Optional accessories

SVRM-100 Remote control unit
SVBK-100 33-pin interface board
SVBK-120 RS-232C interface board
SVBK-130 Satellite interface board (Available soon)
SVBK-140 RS-422A interface board
SVBK-150 Digital noise reduction board
SVBK-160 Time code board
RM-450CE Editing control unit
YC-30V/15V/10V S video cable
SYC-2/5 S video cable (with locking rings)
RK-C74 Audio cable
RMM-980 Rack mount kit

Design and specifications are subject to change without notice.

Glossary

Chrominance signal

The signal that carries information about hue and color. Also called the C signal.

Composite video signal

A signal that consists of video, sync, and color burst signals.

CTL signal

Abbreviation for control signal. In players, regular pulses are used to synchronize the tape travel and the scanning position of the video heads. These are recorded on a special track so that the video heads can scan the playback tape accurately.

Jitter

Small, rapid aberrations in the horizontal or vertical size that may appear on a display because of phase deviations in the synchronized signal. This may be caused by noise or inconstant tape transport or head drum rotation when the VTR is recording or playing back.

Luminance signal

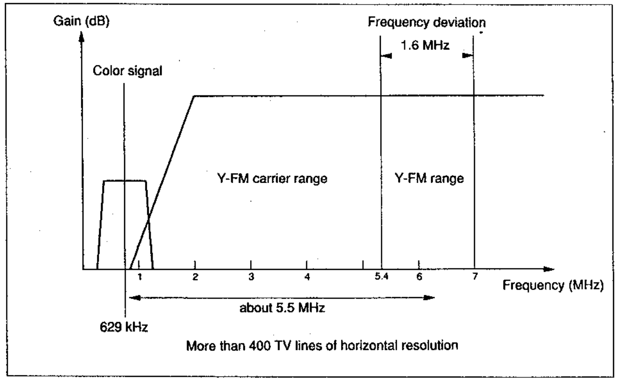
The signal that determines the brightness of the picture.

S video signal

Separated video signals: Y(luminance) signal and C(chrominance) signal. Separating the video signals results in less deterioration, compared with the composite video signal mixed Y and C signal.

S-VHS format

S-VHS is a newly developed format that provides high resolution and high picture quality (more than 400 TV lines of horizontal resolution). This is made possible by the S-VHS video signal recording/playback circuit and high-quality S-VHS tape. The VTR cannot record/play back ordinary VHS tapes in the S-VHS format.



S-VHS format

Sync signal

A reference signal consisting of vertical and horizontal sync signals and used to synchronize the time codes. Also called the composite sync signal.

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SECTION 2
SERVICE INFORMATION

2-1. CABINET REMOVAL AND INSTALLATION

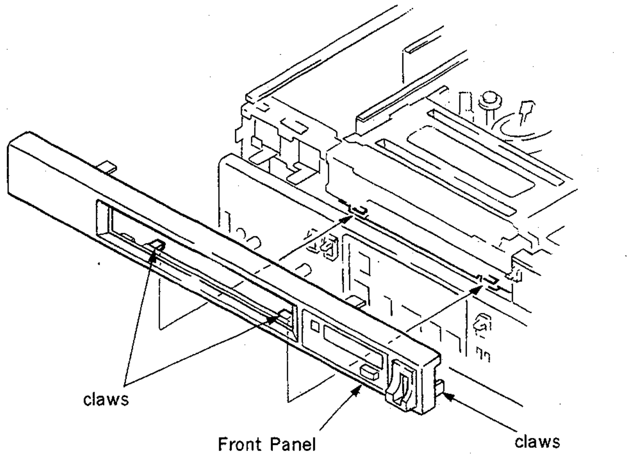
Front panel

Removal

1. Remove the top panel and the right and left panels.
2. Remove two screws at right and left and two screws on the top.
3. Remove the front panel disengaging it from the projections of the chassis.

Installation

1. Align the claws of the front panel to the holes of the chassis, then install the front panel.


claws
Front Panel
claws

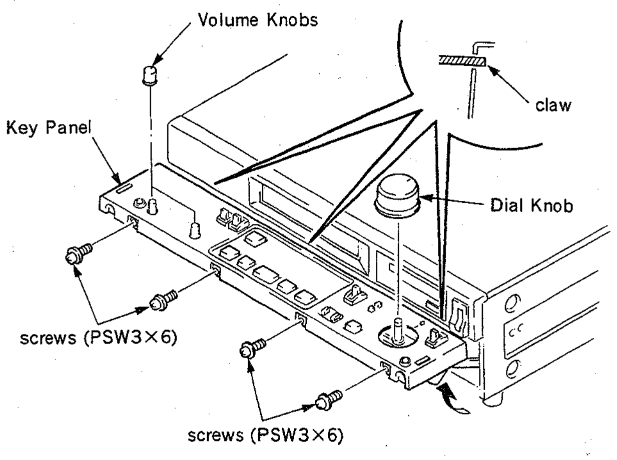
Key panel

Removal

1. Remove the dial knob and volume knobs.
2. Put the slide switch perpendicularly to the surface of the key panel.
3. Open the key panel at 90 degrees angle and remove four screws. (Refer to Sec.2-5 Position Adjustment of key panel)
4. Reverse the key panel at 30 degrees angle, and remove the key panel disengaging it from the projections.

Installation

1. Align the holes on the chassis with three claws on the key panel, then put the key panel taking care of the slide switch.
2. Open the key panel at 90 degrees angle, and fix the four screws.
3. Close the key panel, and install the dial knob and volume knobs.


Volume Knobs
claw
Key Panel
Dial Knob
screws (PSW3×6)
screws (PSW3×6)

Side panel

Removal

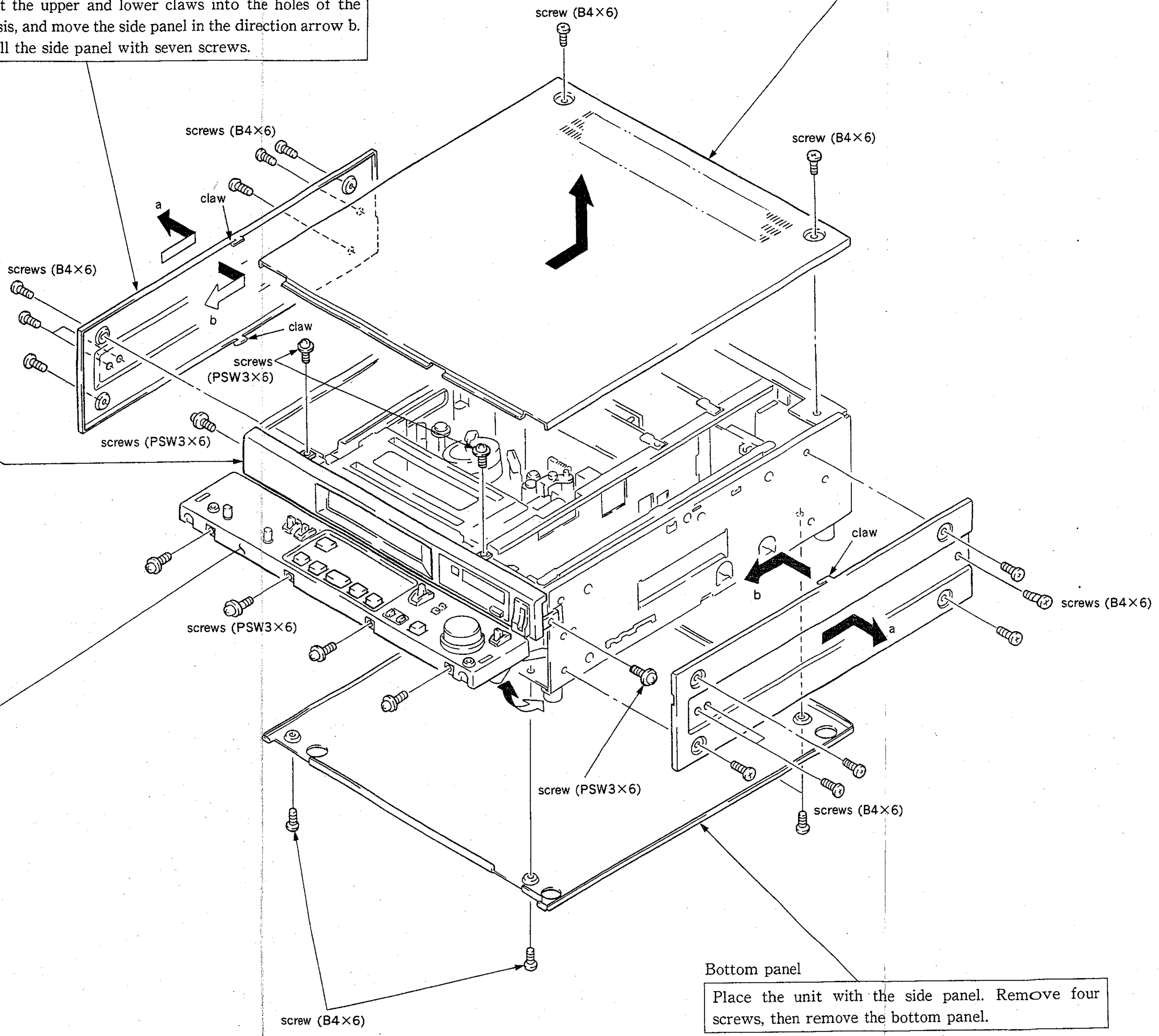
1. Remove seven screws. Move the side panel in the direction of arrow a, then remove the side panel.

Installation

1. Insert the upper and lower claws into the holes of the chassis, and move the side panel in the direction arrow b.
2. Install the side panel with seven screws.

Top panel

Remove two screws. Move the top panel in the direction of arrow, then remove the top panel.


screw (B4×6)
screws (B4×6)
claw
a
screw (B4×6)
screws (B4×6)
b
claw
screws (PSW3×6)
screws (PSW3×6)
screws (PSW3×6)
claw
b
screws (B4×6)
a
screw (PSW3×6)
screws (B4×6)
screw (B4×6)

Bottom panel

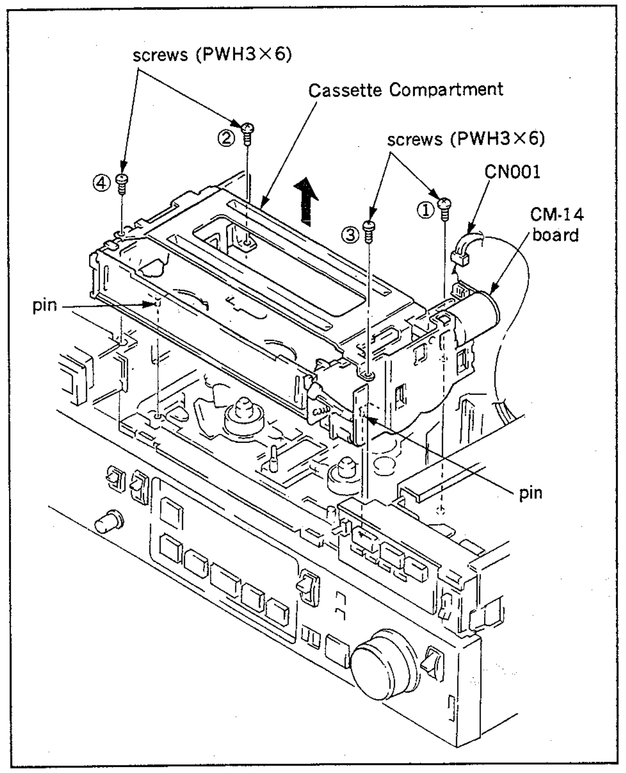
Place the unit with the side panel. Remove four screws, then remove the bottom panel.

2-2. CASSETTE COMPARTMENT (FL Ass'y) REMOVAL

1. Remove the top panel and the side panels and the front panel. (Refer to Sec.2-1 Cabinet Removal and Installation)
2. Disconnect connector CN001 on the CM-14 board.
3. Remove four screws and the cassette compartment in the direction of the arrow.

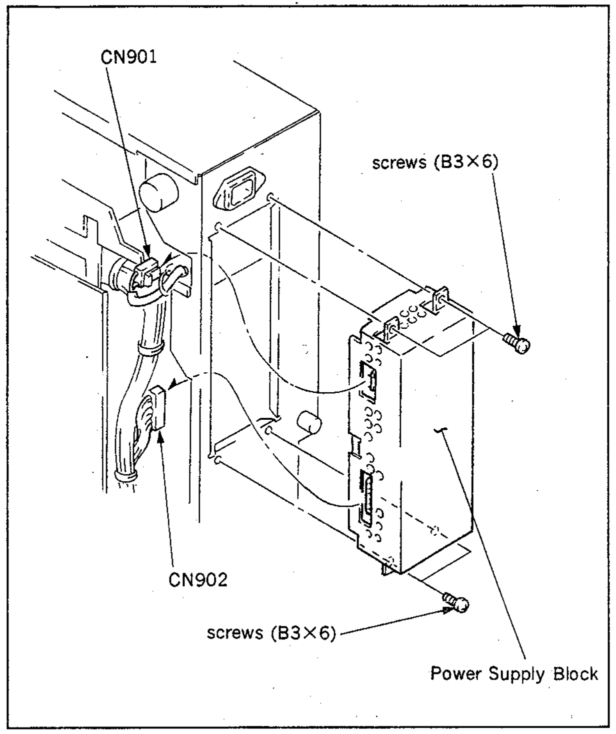
⟨Note on installation⟩

1) Align two pins of the cassette compartment to the holes of base plate.
2) Fix the screws in order ① to ④.


screws (PWH3×6)
Cassette Compartment
②
screws (PWH3×6)
CN001
④
①
CM-14 board
③
pin
pin

2-3. POWER SUPPLY BLOCK REMOVAL

1. Place the unit with the left side panel at the bottom, and remove the bottom panel. (Refer to Sec. 2-1 Cabinet Removal and Installation)
2. Disconnect connector CN901 and CN902.
3. Remove four screws, and remove the power supply block.


CN901
screws (B3×6)
CN902
screws (B3×6)
Power Supply Block

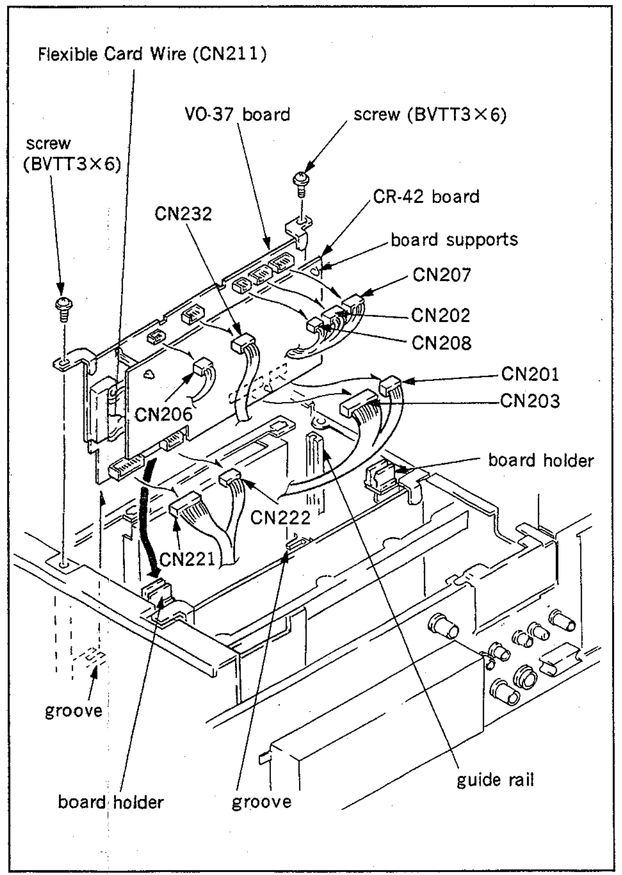
2-4. PRINTED CIRCUIT BOARDS SERVICE

2-4-1. VO-37 and CR-42 Boards Removal

1. Remove the top panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Remove two screws and pull up the VO-37 board and the CR-42 board.
3. Insert the VO-37 board into two board holders for standing it.
4. Disengage three board supports from the CR-42 board, and open the CR-42 board.
5. Disconnect nine connectors (CN201,202,203,206,207,208, 221,222,232) and the flexible card wire (CN211) on the VO-37 board.

⟨Note on installation⟩

- Align the VO-37 board with the two guide rails and the grooves of chassis.

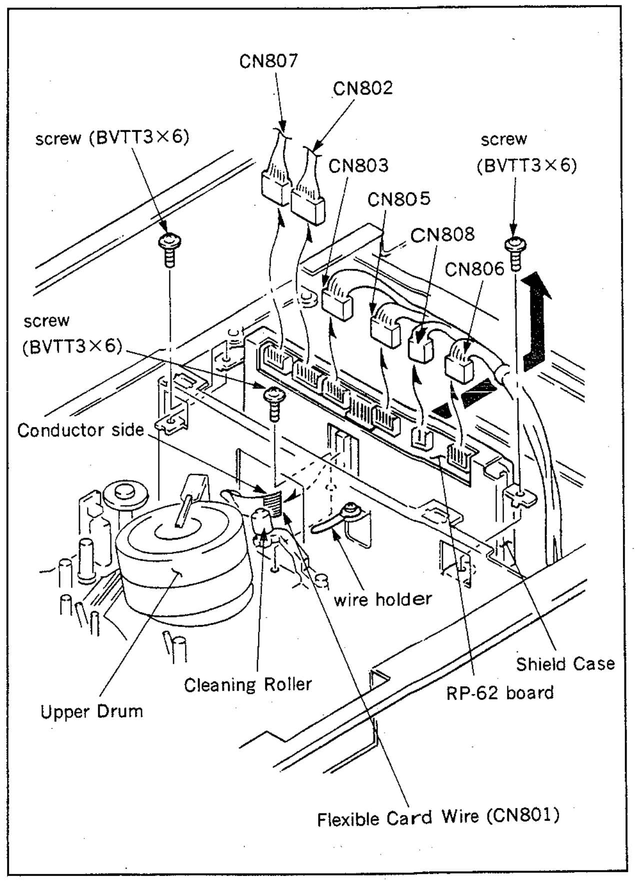

Flexible Card Wire (CN211)
VO-37 board
screw (BVTT3×6)
screw (BVTT3×6)
CR-42 board
CN232
board supports
CN207
CN202
CN208
CN201
CN203
CN206
board holder
CN222
CN221
groove
board holder
groove
guide rail

2-4-2. RP-62 Board Removal

1. Remove the top panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Remove harnesses from the wire holder.
3. Disconnect six connectors (CN802, 803, 805 through 808) and the flexible card wire (CN801) on the RP-62 board.
4. Remove three screws and remove the RP-62 board with shield case in the direction of arrow.

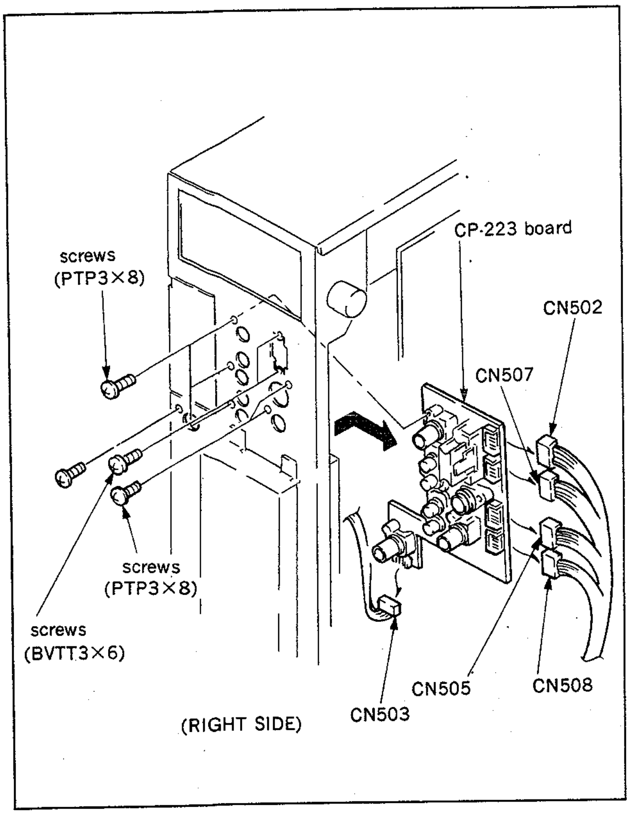
⟨Note on installation⟩

- Take care of the direction of the Conductor side when reconnecting the Flexible Card Wire. Confirm that the Flexible Card Wire does not touch the upper drum and the cleaning roller.


CN807
CN802
screw (BVTT3×6)
CN803
screw (BVTT3×6)
CN805
CN808
CN806
screw (BVTT3×6)
Conductor side
wire holder
Shield Case
Cleaning Roller
RP-62 board
Upper Drum
Flexible Card Wire (CN801)

2-4-3. CP-223 Board Removal

1. Place the unit with the right side panel at the bottom, and remove the top panel and the bottom panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Disconnect four connectors (CN502,505,507,508) on the CP-223 board.
3. Remove eight screws.
4. Remove the CP-223 board, and disconnect connector CN503 on the CP-223 board.


screws
(PTP3×8)
CP-223 board
CN502
CN507
screws
(PTP3×8)
screws
(BVTT3×6)
CN505
CN508
(RIGHT SIDE)
CN503

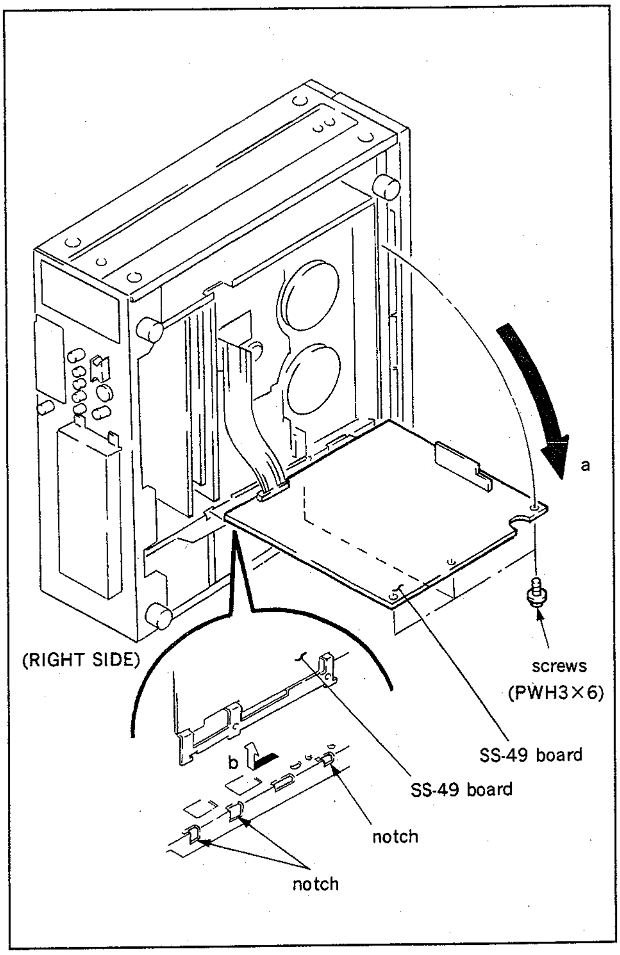
2-4-4. SS-49 Board Opening and Removal

Opening

1. Place the unit with the right side panel at the bottom, and remove the bottom panel. (Refer to Sec. 2-1. Cabinet Removal and Installation)
2. Remove four screws, then open the SS-49 board in the direction of arrow a taking care of the notches.

Removal

1. Disconnect all of connectors on the SS-49 board.
2. Remove the SS-49 board from notches moving the SS-49 board in the direction of arrow b.


a
(RIGHT SIDE)
screws
(PWH3×6)
b
SS-49 board
SS-49 board
notch
notch

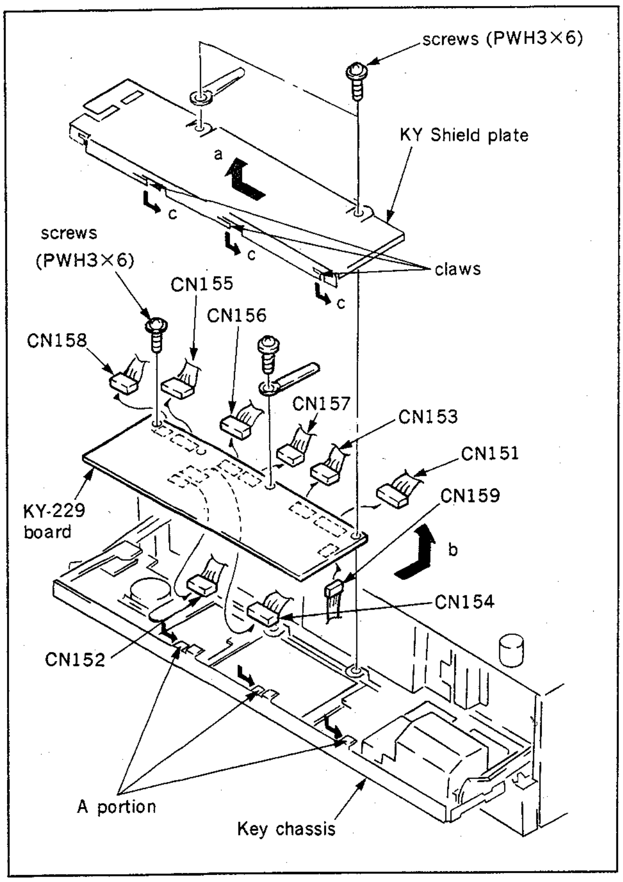
2-4-5. KY-229 Board and SW-574 Board Removal

Place the unit with the top panel at the bottom and remove the key panel. (Refer to Sec. 2-1 Cabinet Removal and Installation)

- KY-229 Board

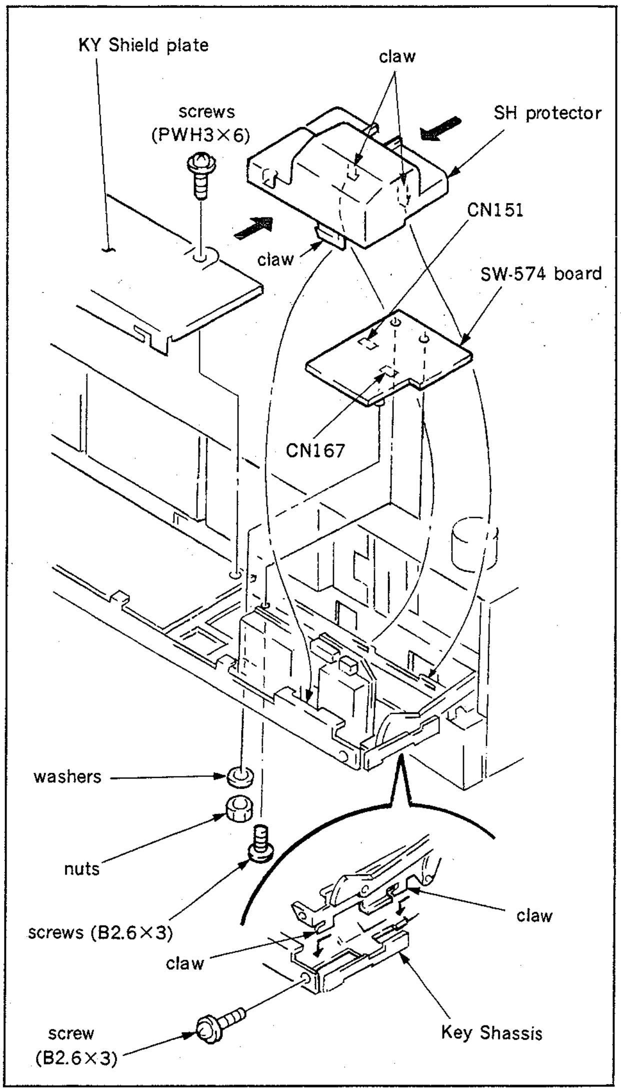
1. Open the key chassis.
2. Remove two screws, then remove the KY shield plate moving it in the direction of arrow a.
3. Remove two screws, then remove the KY-229 board moving in the direction of arrow b.
4. Disconnect nine connectors CN151 through 159 on the KY-229 board.

<Note on installation>
When the KY shield plate is installed, insert the claws of KY shield plate into the A portion of the key chassis moving in the direction of arrow c.


screws (PWH3×6)
KY Shield plate
a
c
c
c
screws
(PWH3×6)
claws
CN155
CN156
CN158
CN157
CN153
CN151
CN159
KY-229
board
b
CN154
CN152
A portion
Key chassis

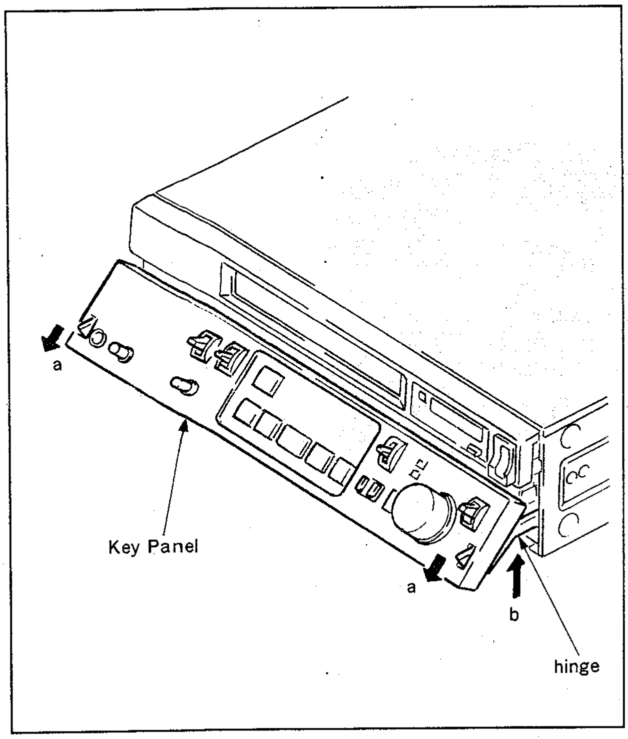
- SW-574 Board

1. Remove two screws on the SW-574 board, and remove nuts and washers of TRACKING (one).
2. Remove the KY shield plate.
3. Push the SH protector in the direction of the arrow, and remove the SH protector disengaging projections.
4. Remove a screw on the key chassis, and remove the board disengaging claws of hinge.
5. Disconnect two connectors (CN151, 167).


KY Shield plate
claw
screws
(PWH3×6)
SH protector
CN151
claw
SW-574 board
CN167
washers
nuts
screws (B2.6×3)
claw
claw
screw
(B2.6×3)
Key Shassis

2-5. POSITION ADJUSTMENT OF KEY PANEL

Open the key panel pushing down the right and left levers on the key panel in the direction of arrow a.
It is possible to open the key panel at the 30, 60 and 90 degrees.
If the key panel is opened at a 90 degrees, it is possible to operate switches on the sub panel.
When closing the key panel, pushing up the right and left hinges in the direction of arrow b.

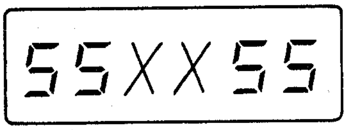


2-6. MEMORY KEEP FUNCTION OF EE-PROM (SS-49 BOARD)

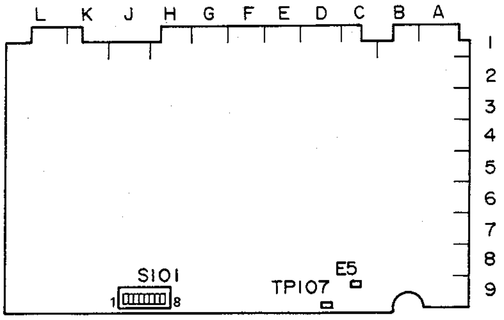
The SS-49 board has EE-PROM M6M80011A (IC102) which saves the hours meter data and the menu setting data. It also has EE-PROM memory backup capacitor (C103).
When the SS-49 board, the EE-PROM is replaced, the data set prior to replacement will be lost. It is necessary to perform the initial settings for the EE-PROM, then perform menu setting once again. In this case, however, the hours meter value will be cleared to zero, and cannot be set again. (If it is necessary to replace a part, it is recommended that you make a record of the data in the memory prior to replacing the part.)
Procedure of initially setting the EE-PROM (same as factory setting)

- EE-PROM initial setting

(1) Set No.1 and No.5 switches of DIP switch S101 on the SS-49 board (H-9) to on.
(2) Short TP107 (D-9) and E5 (GND)(C-9)on the SS-49 board or chassis with the short clip.
(3) Turn the tracking control knob on the front panel to the FIXED position, then turn the POWER switch on.
(4) Wait until the following appears on the display on the front panel.



(5) Remove the shorting clip, then set No.1 and No.5 switches of S101 to off.
(6) Turn off the POWER switch.

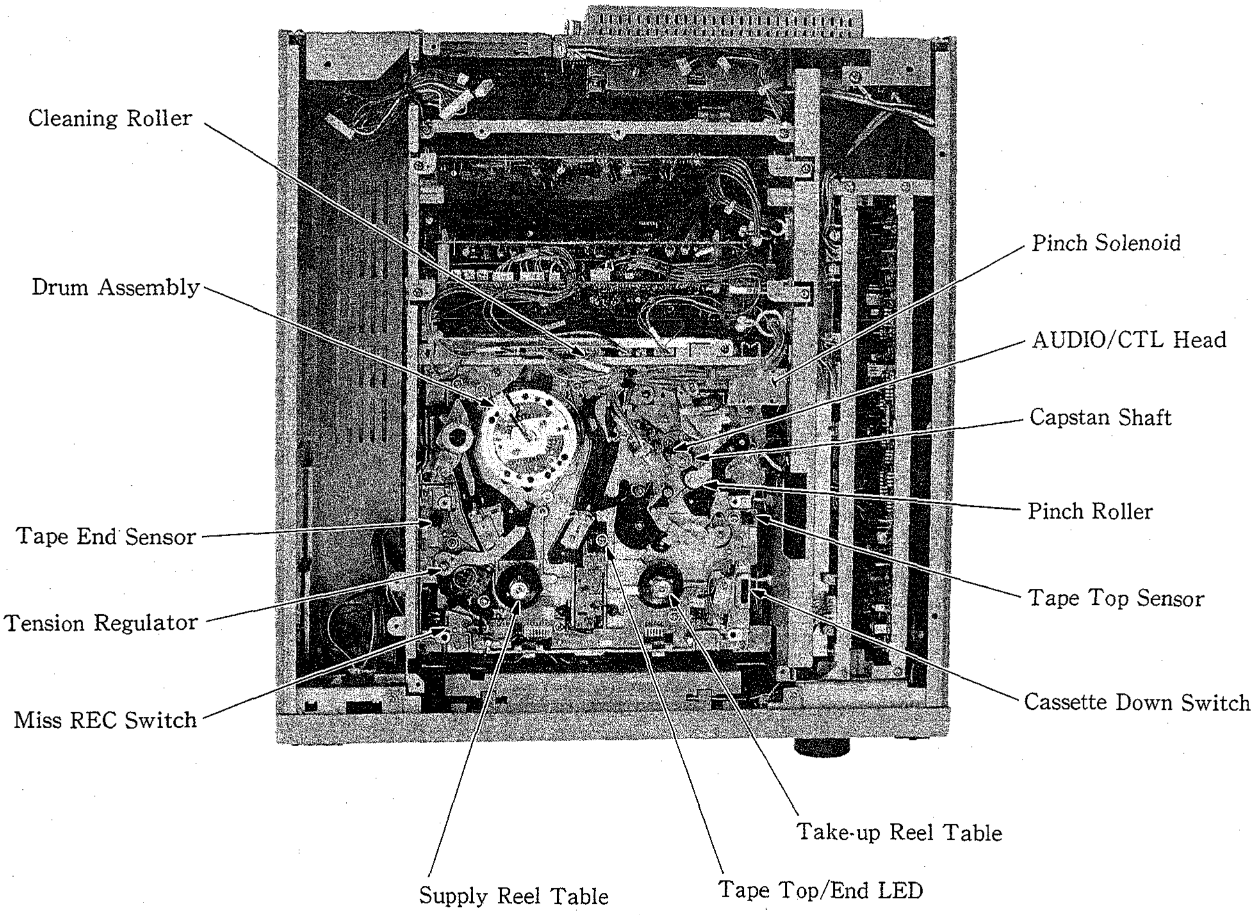


SS-49 Board Component Side

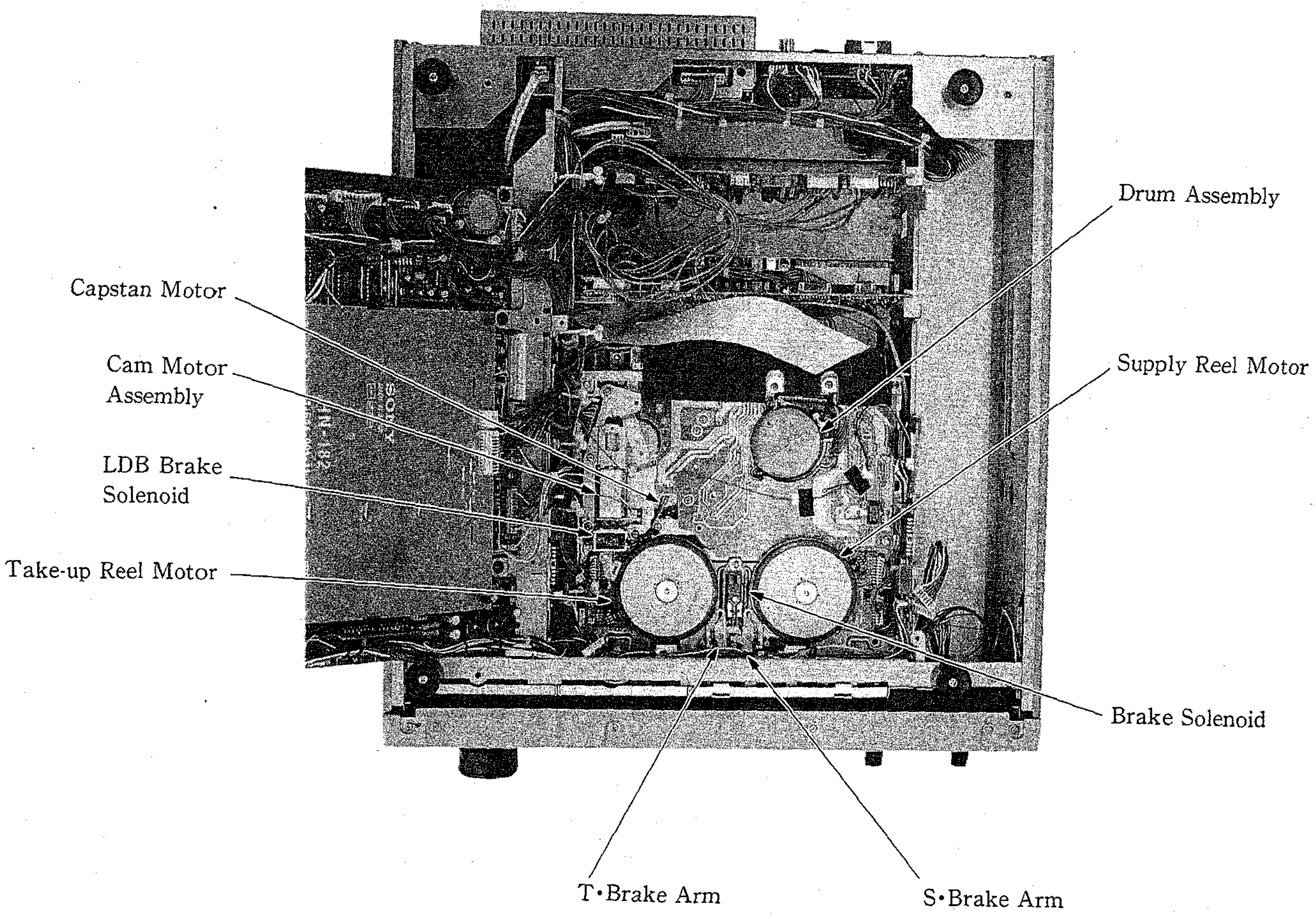
2-7. LOCATION OF MAIN PARTS

2-7-1. Location of the Main Mechanical Parts/Components

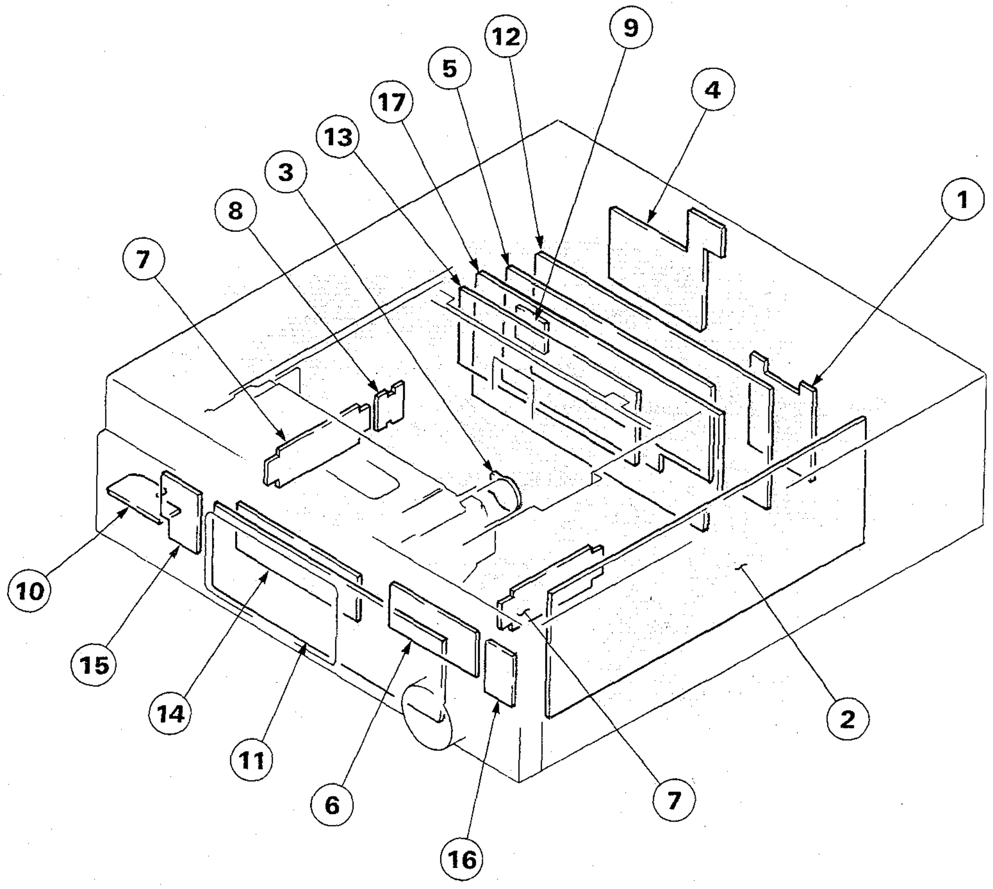
〈TOP VIEW〉


Cleaning Roller
Drum Assembly
Tape End Sensor
Tension Regulator
Miss REC Switch
Pinch Solenoid
AUDIO/CTL Head
Capstan Shaft
Pinch Roller
Tape Top Sensor
Cassette Down Switch
Take-up Reel Table
Supply Reel Table
Tape Top/End LED

〈BOTTOM VIEW〉

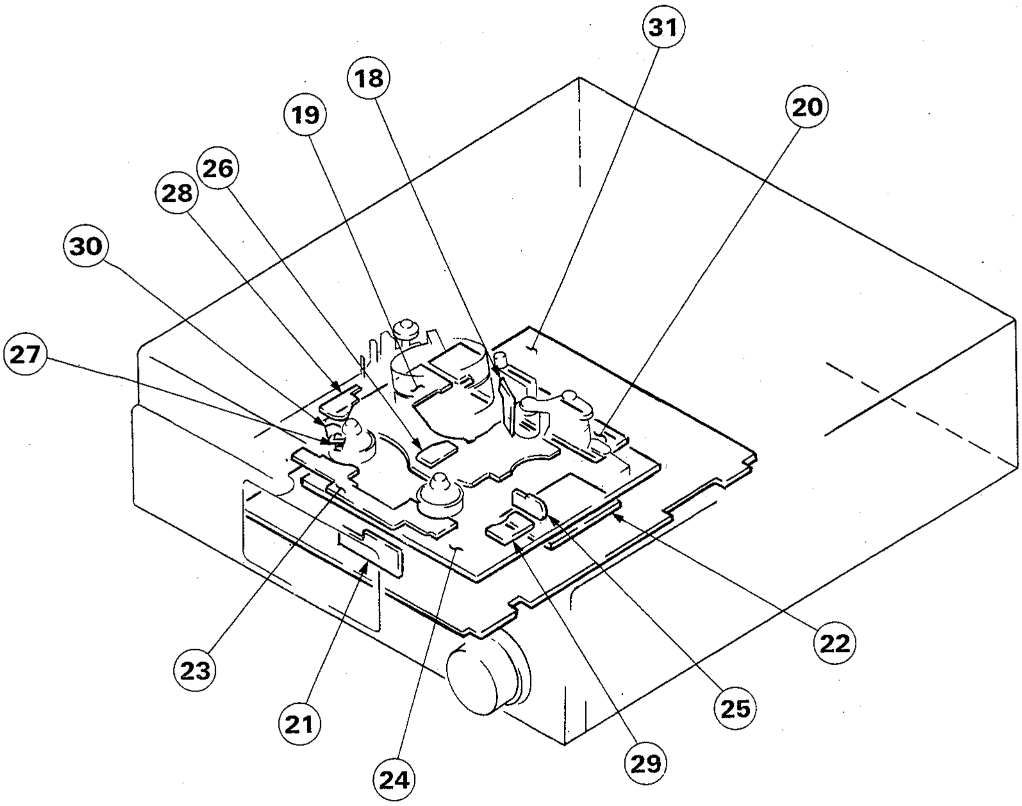

Drum Assembly
Capstan Motor
Supply Reel Motor
Cam Motor Assembly
LDB Brake Solenoid
Take-up Reel Motor
Brake Solenoid
T•Brake Arm
S•Brake Arm

2-7-2. Location of the Printed Circuit Boards



12
9
5
4
17
13
3
8
1
7
10
15
14
11
6
16
7
2

① AC-148 Board
② AU-179 Board
③ CM-14 Board
④ CP-223 Board
⑤ CR-42 Board
⑥ DP-166 Board
⑦ DR-153 Board
⑧ DUS-544 Board
⑨ DUS-592 Board
⑩ HP-56 Board
⑪ KY-229 Board
⑫ NR-40 Board
⑬ RP-62 Board
⑭ SW-514 Board
⑮ SW-574 Board
⑯ SW-532 Board
⑰ VO-37 Board


31
18
20
19
26
28
30
27
23
21
24
29
25
22

⑱ AH-28 Board	㉕ LD-35 Board
⑲ DR-167 Board	㉖ LE-80 Board
⑳ DR-176 Board	㉗ LE-86 Board
㉑ DUS-445 Board	㉘ SE-151 Board
㉒ DUS-535 Board	㉙ SE-152 Board
㉓ HN-160 Board	㉚ SE-159 Board
㉔ HN-182 Board	㉛ SS-49 Board

2-8. PRINTED CIRCUIT BOARDS

SYSTEM	BOARD	CIRCUIT FUNCTION
VIDEO	RP-62	Video & AFM Head Amp.
	CR-42	Chroma Process
	VO-37 (inc.DUS-592)	Y/C Video Process
	NR-40	Noise Reducer
AUDIO	AU-179	AFM Process/Normal Audio Process
	AH-28	Audio/CTL Head
	SW-574	Audio Signal Selector
SERVO • SYSTEM CONTROL	SS-49 (inc.DUS-445/535)	Servo & System Control
	DR-153 (a)	T-Reel Driver
	DR-153 (b)	S-Reel Driver
	DR-167	Cam Mode Detect & Drum Motor Driver
	DR-176	Capstan FG Amp. & Capstan Motor Driver
	DUS-544	Capacitor for T-Brake Solenoid
	CM-14	Cassette Compartment Motor
	LD-35	Loading Motor
	LE-80	Tape Top/End LED
	LE-86	Tension Regulator LED
	KY-229	Function Key/LED/Switch
	DP-166	Counter Display
	SE-151	Tape End Sensor
	SE-152	Tape Top Sensor
	SE-159	Tension Regulator CDS Detect
	HN-160	Connection
	HN-182	Connection (Servo)
POWER	AC-148	AC Input
CONNECTOR	CP-223	Connection of Rear Connector
	HP-54	HEADPHONES Connector
	SW-514	Select Switch
	SW-532	TIMER PLAY Switch

2-9. CONNECTION CONNECTORS

When external cables are connected to the various connectors on the rear panel during maintenance, the hardware listed below (or equivalents) must be used.

panel indication	connector
VIDEO OUT SYNC IN	1-560-069-11 PLUG, BNC, MALE
VIDEO OUT (S VIDEO)	YC-30V/15V/10V or SYC-5/2 : CABLE (Option)
AUDIO OUT AUDIO MONITOR	1-560-138-11 PLUG, PIN (PHONO)
TV OUT	1-506-161-00 RECTANGULAR 8P, MALE

2-10. CONNECTOR INPUT/OUTPUT SIGNAL

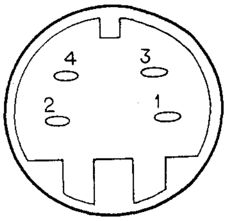
The connector Input/output signals of the panel are as follows.

- VIDEO SYSTEM

INPUT
SYNC IN : BNC type × 1
0.3 to 4 V p-p, 75ohms, Unbalanced, sync negative

OUTPUT
VIDEO OUT : BNC type × 1
Composite video signal : 1.0±0.2 V p-p, 75ohms, Unbalanced, sync negative
S VIDEO OUT : 4-Pin mini DIN × 1
Luminance signal : 1.0 V p-p, 75ohms, unbalanced
Color signal : 0.3 V p-p, burst, 75ohms, unbalanced

⟨external view⟩

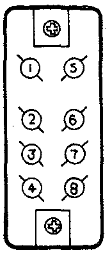


S-VIDEO

PIN No.	OUTPUT SIGNAL
1	Y (G)
2	C (G)
3	Y (X)
4	C (X)

TV OUT : 8-Pin multi × 1
Composite signal : 1.0Vp-p, 75ohms, sync negative

⟨external view⟩



TV OUT

PIN No.	OUTPUT SIGNAL
1	AUDIO MONITOR OUT (X)
2	VIDEO OUT (X)
3	———
4	———
5	AUDIO MONITOR OUT (G)
6	VIDEO OUT (G)
7	———
8	———

- AUDIO SYSTEM

OUTPUT
AUDIO OUT NORM/Hi-Fi CH-1/L, CH-2/R
: Phono jack × 1 each
−6dBs (47kilohms load), unbalanced
MONITOR OUT
: Phono jack × 1
−5dBs (47kilohms load), unbalanced
TV OUT
: 8-Pin multi x 1
−5dBs (47kilohms load), unbalanced

2-11. RACK MOUNTING

This unit can be mounted in a 19-inch standard rack. It is recommended to use the following kit.

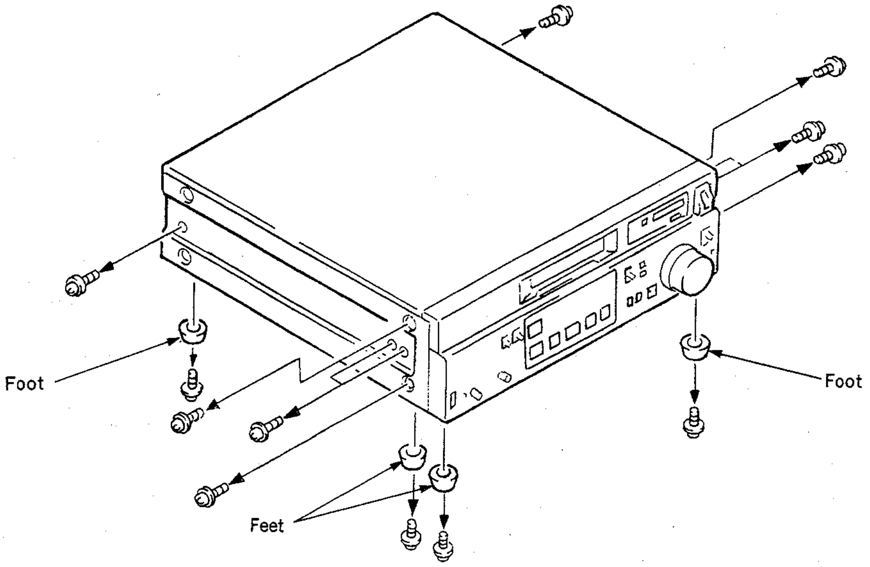
SONY Rack Mount Metal : RMM-980 (Optional Accessory)

- Component parts

slide rail	×2
handle	×2
L-shaped wrench	×1
hexagon socket bolt (4×10)	×8
W4 middle	×8
plate nut	×4
screw (B4×8)	×4
(B4×16)	×4
(RK5×14)	×4
trapezoid type washer	×4

2-11-1. In Case of Use Kit RMM-980

1. Remove each five screws on right and left side panels, and the four feet on the bottom panel.
   If the unit is mounted in the rack with the feet attached, they will contact the lower other unit in the rack and the unit cannot be pulled out from the rack.

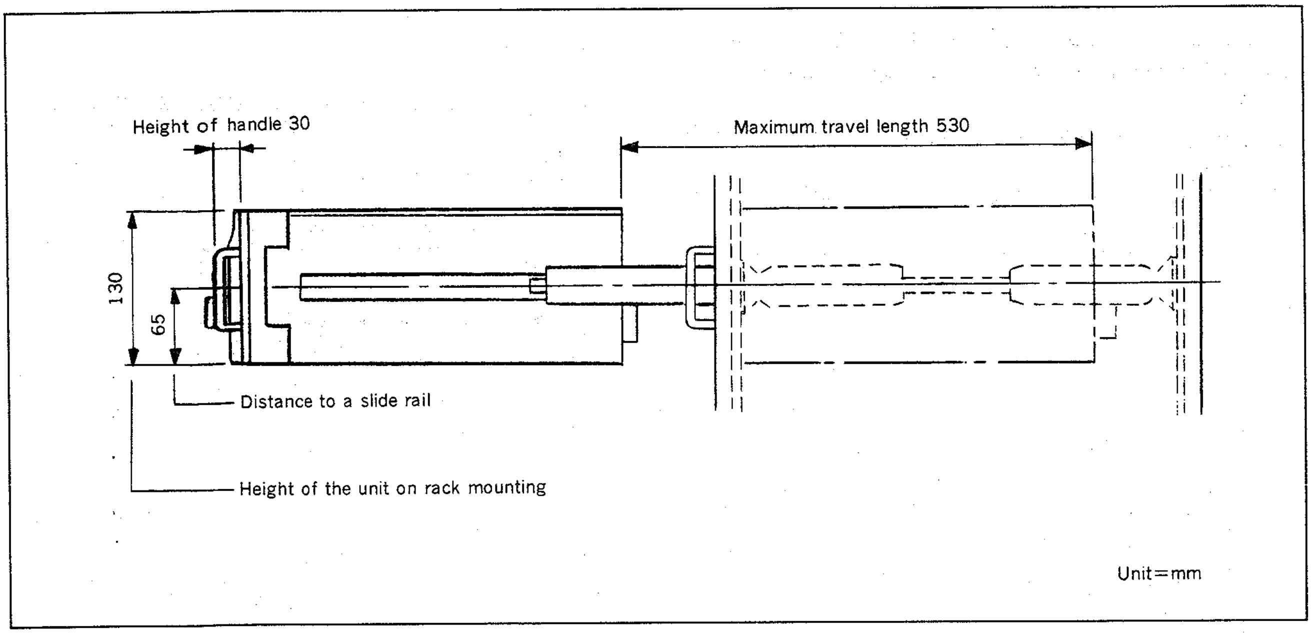


2. Install slide rails and handles.

   As to mounting method of the rack mounting kit, refer to OPERATING INSTRUCTIONS packed with the rack mount metal RMM-980.

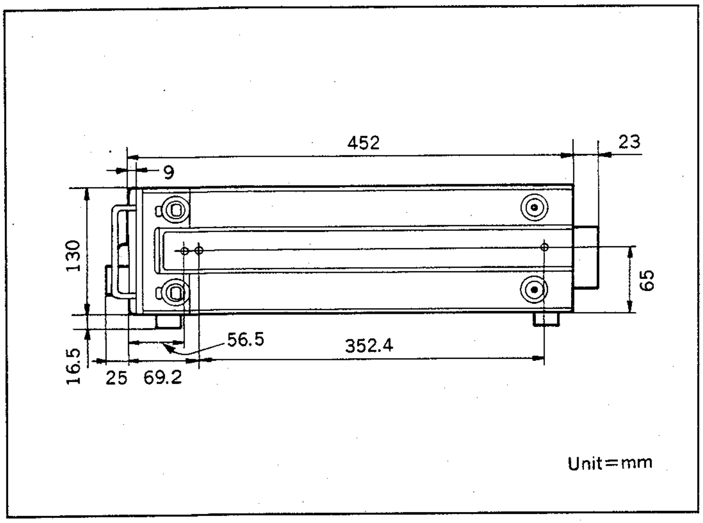
Note on rack mounting :
- When several units are mounted in a rack, it is recommended to install a fan for ventilation. Good air circulation is essential to prevent internal heat build-up in a rack(10°C to 35°C must be met for all units).
- Never remove a upper panel and lower panel during rack mounting.
- Be sure to secure the rack to the floor to avoid accidents when a unit is pulled out.

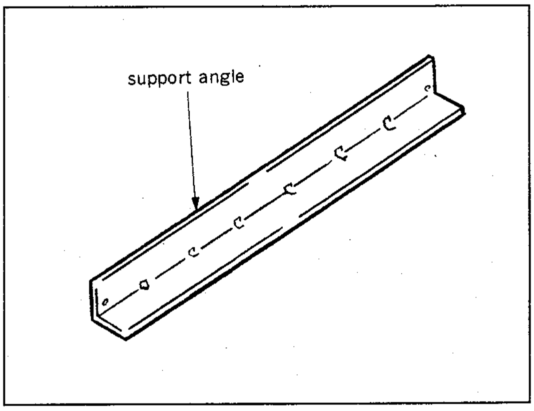
- Maximum travel length of the RMM-980 is as follows.


Height of handle 30
Maximum travel length 530
130
65
Distance to a slide rail
Height of the unit on rack mounting
Unit=mm

2-11-2. In Case of Use Kit except RMM-980

When a support angle or a slide rail sold by rack makers is used, check the outside dimensions of the unit and the slide rail mounting holes according to the instruction manual of each rack maker.

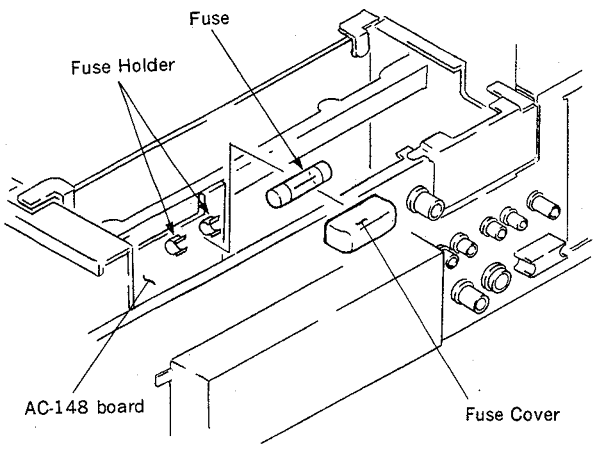

452
23
9
130
65
56.5
352.4
16.5
25
69.2
Unit=mm


support angle

2-12. FUSE REPLACEMENT

Power fuse is mounted on the AC-148 board. If the fuse has blown first remedy cause of trouble, replace the fuse.

1. Remove the top panel. (Refer to Sec.2-1 Cabinet Removal and Installation)
2. Remove the fuse cover on the AC-148 board, and replace the fuse.



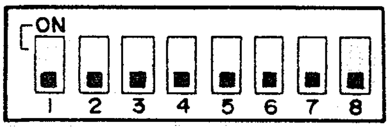
2-13. SWITCH SETTING

- NR-40 Board

S1 : ON (Shipped position) PB VIDEO MUTE OFF

- SS-49 Board

S101-1 to S101-8 : OFF (Shipped position)



Function of S101 switches (ON position)

S101-1. Error detection signal muting/tracking control center position detection.
Error detection signal muting: This switch disables error signals of system control block. Even though the machine operation is not stopped due to error detection.
TRACKING (VR) center position detection: Set the tracking control position to center. When power is turned on while TP107 and GND are short-circuited, the center position of TRACKING control is stored in the form of DC voltage by microprocessor (IC101/SS-49)

S101-2. E-E muting OFF: This switch disables the signal that mutes E-E signal.
Machine can enter E-E mode even in the mode when E-E mode is cancelled.

S101-3. Always OFF

S101-4. SEARCH DIAL DIRECT mode
Machine can enter search mode even without pressing SEARCH button of key panel, enabling SHUTTLE dial operation.

S101-5. MENU initialize
The content of MENU setting is re-set into the default content of initial setting.

S101-6. Always OFF

S101-7. SERVICE mode: Ordinary maintenance work is done in OFF mode.

S101-8. TOP/END sensor muting
This switch mutes tape top and tape end detection signals.

2-14. SPARE PARTS

2-14-1. Spare Parts

1. The ⚠ -marked components are critical to safety. Replace only with the same components as specified.
2. Replacement parts supplied from the Sony Parts Center will sometimes have a different shape from the original parts. This is due to the use of improved parts and/or to engineering changes or standardization of genuine parts. This manual's exploded views and electrical spare parts list indicate the part numbers of the standardized genuine parts in use at present. Regarding part changes in our engineering department, refer to Sony service bulletins and service manual supplements.
3. The parts marked with a in the SP column of the exploded views and electrical spare parts list are normally stocked for replacement purposes. The parts marked with o in the SP column are not normally required for routine service work. Orders for parts marked with o will be processed, but allow for additional delivery time.

2-14-2. Replacement of Flexible Card Wires (20P, 26P, 28P)

20P flexible card wire is used on between the SS-49 board and the HN-182 board. 26P flexible card wire is used on between the CR-42 board and the VO-37 board. 28P flexible card wire is used on between the DR-176 board and the SS-49 board.
When handling a flexible card wire, be very careful not to bend it because this will markedly reduce its life.

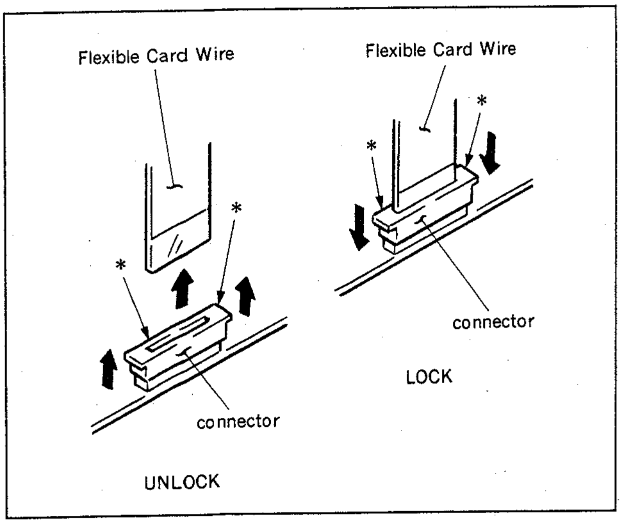
<Straight Type>

Disconnecting procedure

Pull up the * marked portions of connector, and pull out the flexible card wire from the connector.

Installing procedure

Install the flexible card wire as far as it will go (up the line indicated on the flexible card wire) and push down the * marked portions of connector.



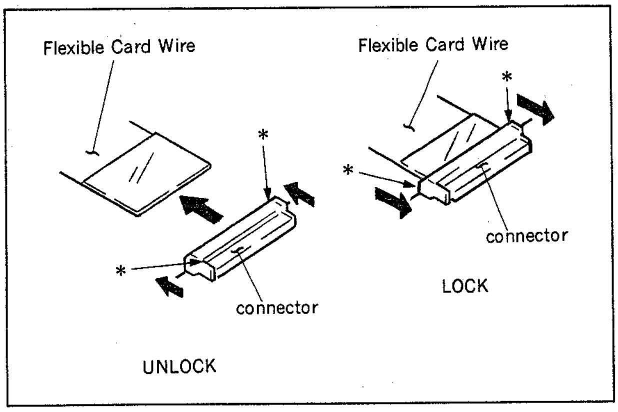
<Angle Type>

Disconnecting procedure

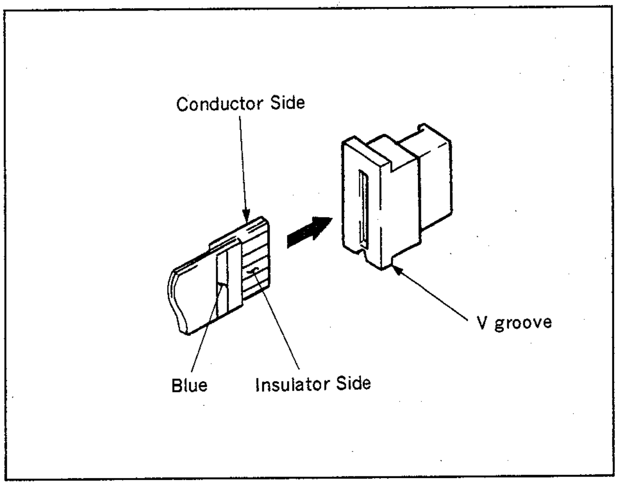
Slide the * marked portions of connector in the direction of the arrow, and then pull out the flexible card wire from the connector.

Installing procedure

Insert the flexible card wire so that is conductor side is facing the printed circuit board, and insert it as far as it will go (up to the line indicated on the flexible card wire). Then slide it in the opposite direction of the arrow to lock.



Note : The flexible card wire consists of conductor side and insulator side. The flexible card wire must be inserted with the conductor side facing the correct way. If it is not the circuit will not work.



2-15. OPERATION OF THE SVP-9020 WITHOUT THE CASSETTE COMPARTMENT ASS'Y OR THE CASSETTE TAPE

1. Remove the cassette compartment. (Refer to Sec. 2-2 Cassette Compartment Removal)
2. Turn on No.8 switch of DIP switch S101/SS-49 board (J-9). (This stops tape top/end stop sensor function.) (Fig. 1.)
3. Push down the CASSETTE DOWN switch with tape and etc. (Fig. 2.)
4. Turn on the POWER.

In this condition, the SVP-9020 can be operated on the front panel and with remote controller (RM-V200, RM-V100, SVRM-100 etc.)

Note : Be sure to turn off No.8 switch after operation.

[Operating the SVP-9020 with the cassette compartment removed and a cassette tape loaded.]

- Be sure to turn off No.8 switch of DIP switch S101.
  (If the DIP switch is turned on, the tape will not stop at the tape top/end, and it is possible to damage the head tip and to deform the tape guide.)

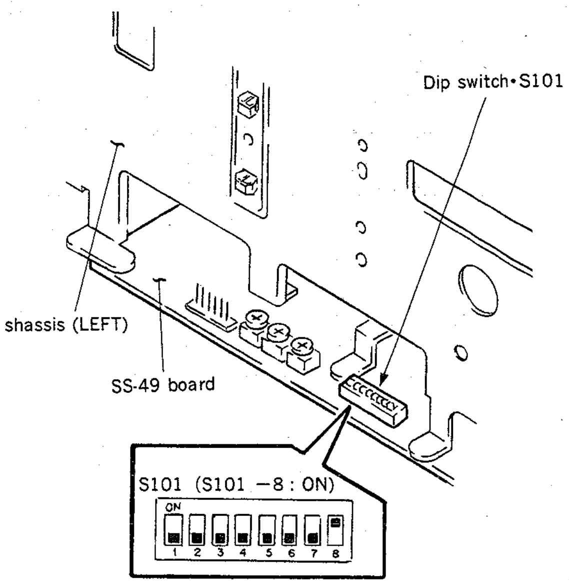

Dip switch•S101
shassis (LEFT)
SS-49 board
S101 (S101 −8 : ON)
ON
1 2 3 4 5 6 7 8

Fig. 1.

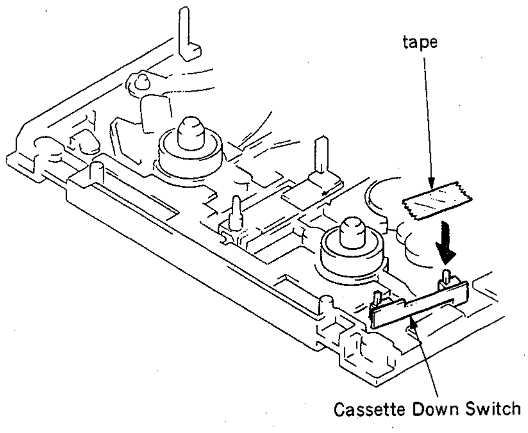

tape
Cassette Down Switch

Fig. 2.

2-16. CASSETTE TAPE REMOVAL WHEN NORMAL EJECTION IS NOT POSSIBLE

1. Remove the top panel and right and left side panels. (Refer to Sec.2-1 Cabinet Removal and Installation)
2. Open the SS-49 board. (Refer to Sec.2-4-5 SS-49 board Opening)
3. Remove the screw, and remove the cam motor ass'y from the drive gear ass'y.
4. Rotate the worm wheel of the drive gear ass'y manually in the direction of the arrow until the tape threading guides are in the unthreading end state.
5. Rotate the S side reel motor by hand in the direction of the arrow so that the tape is taken up into the cassette. (Fig. 1.)
6. Rotate the loading motor of the cassette compartment ass'y manually in the direction of arrow, and eject the cassette . (Fig. 2.)

CAM motor Ass'y Installation

1) Fit the groove of the cam motor ass'y over the 'a' face of the drive gear ass'y.
2) Align the hole in the cam motor ass'y with the projection on the drive gear ass'y.
3) Set the cam motor parallel to the 'b' face of the drive gear ass'y, then screw is fixed. (Fig. 3.)

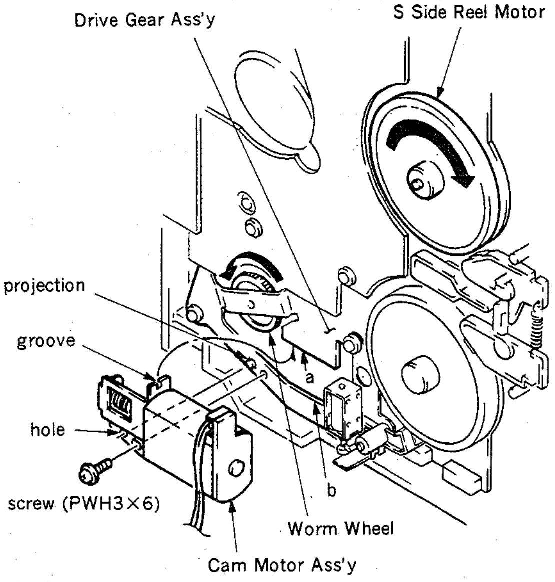

Drive Gear Ass'y
S Side Reel Motor
projection
groove
hole
screw (PWH3×6)
a
b
Worm Wheel
Cam Motor Ass'y

Fig. 1.

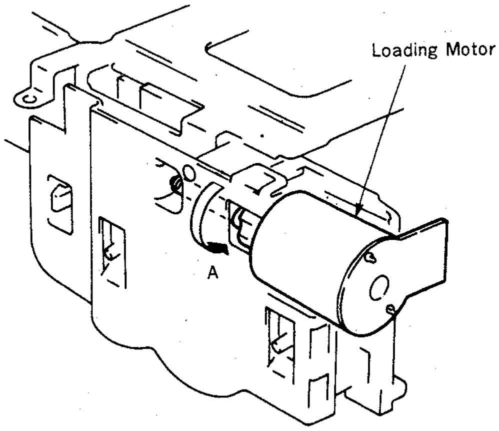

Loading Motor
A

Fig. 2.

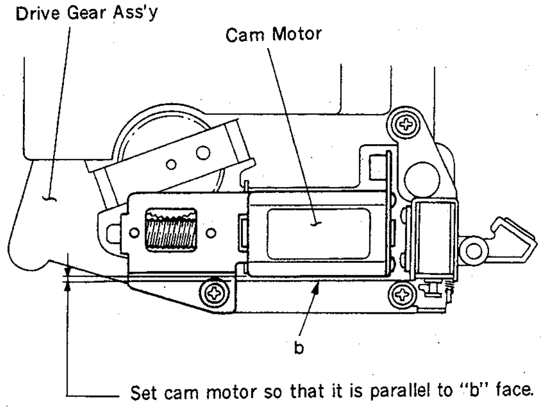
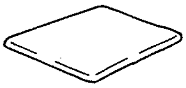
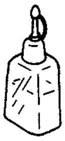
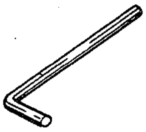
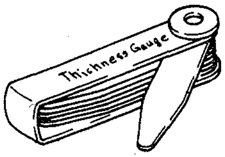
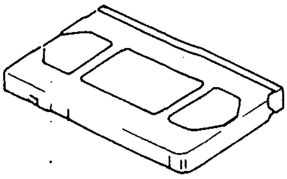
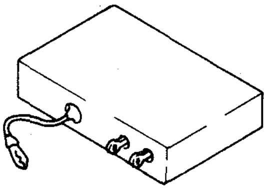
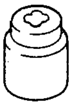
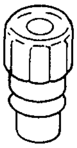
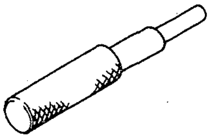
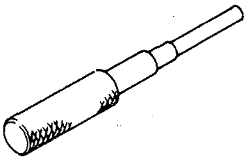
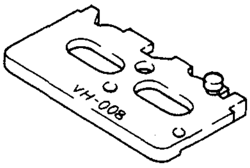
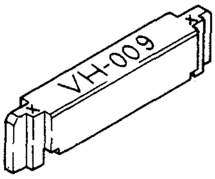
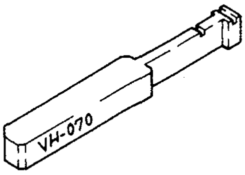
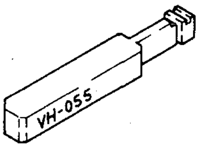
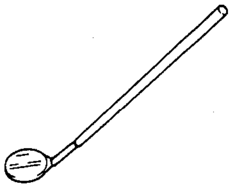
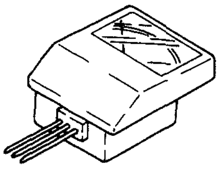
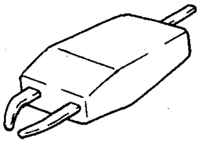
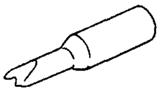
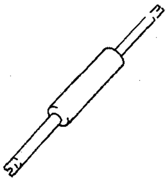
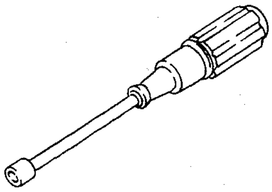
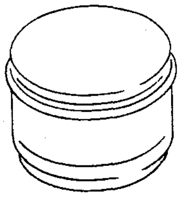
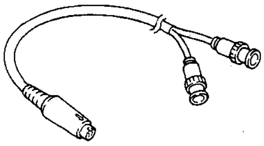
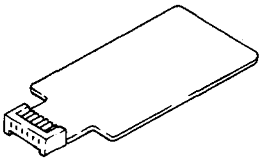

Drive Gear Ass'y
Cam Motor
b
Set cam motor so that it is parallel to "b" face.

Fig. 3.

2-17. ALIGNMENT FIXTURE

Ref. No	Part No.	Description	For Use
J-1	2-034-697-00	Cleaning Cloth	Cleaning
J-2	9-919-573-01	Cleaning Fluid	Cleaning
J-3	7-700-736-05	L-Shaped Hexagonal Wrench (1.5 mm)	Reel table ass'y replacement
J-4	7-700-736-06	L-Shaped Hexagonal Wrench (0.89 mm)	Guide roller ass'y replacement
J-5	9-911-053-00	Thickness Gauge	Guide roller ass'y replacement
J-6	H-7099-052-H	Alignment Tape, JVC-MH-2 (PAL)	Switching position adjustment
J-7	8-192-603-51	Alignment Tape, KRV-35NF	Audio alignment
J-8	8-192-603-96	Alignment Tape, KRV-39PF	Audio alignment
J-9	8-192-605-21	Alignment Tape, KRV-51HN (S-VHS)	Tape run alignment Video alignment
J-10	Pending	Alignment Tape, KRV-45HPS (S-VHS)	Tape run alignment Video alignment
J-11	Pending	Alignment Tape, KRV-45PS (VHS)	Audio alignment Video alignment
J-12	8-192-602-48	Alignment Tape, KRV-4821PSA (PAL)	X Value adjustment, Tracking adjustment Audio Head adjustment
J-13	8-896-024-94	Reference Tape (Blank Tape), GR-120KG	Video and Audio alignment (VHS format only)
J-14	J-6380-710-A	X Value Adjustment Tool	X Value adjustment
J-15	H-7099-035-H	Torque Gauge Adaptor	S/T Reel table winding torque check
J-16	H-7099-039-H	Torque Gauge	
J-17	J-6380-040-A	RG Reference Pin (1)	Drive gear replacement
J-18	J-6380-050-A	RG Reference Pin (2)	
J-19	J-6380-080-A	Reference Plate	Reel table and tape guide height adj. Audio head azimuth and zenith adj.
J-20	J-6380-090-A	Reel Table Height Adj. Tool	Reel table height adjustment
J-21	J-6380-700-A	Master Block	Tape guide height adjustment Audio head azimuth and zenith adj.
J-22	J-6380-550-A	Master Block	Tape guide height adjustment
J-23	J-6080-840-A	Small Mirror	Tape run alignment
J-24	Standard Products	Tentelometer, T2-H7-UMC	Tape tension adjustment
J-25	Standard Products	Head Degausser	Head degauss
J-26 J-27	J-6082-044-A or J-6080-811-A	Tape Guide Adjustment Screwdriver	Tape guide height adjustment
J-28	7-700-751-02	Box Screwdriver (width 5.5 mm)	Tape run adjustment
J-29	J-6090-014-A or Standard Products	MOLYKOTE Grease EM-30LG MOLYKOTE Grease EM-30L (DOW CORNING Corp.)	Greasing
J-30	J-6381-380-A	S-BNC Video Cable	Video alignment
J-31	J-6381-370-A	RP Extension Tool	Video and Audio alignment

J-1 	J-2 	J-3, J-4 	J-5  Thickness Gauge
J-6, J-7, J-8, J-9, J-10, J-11, J-12, J-13 	J-14 	J-15 	J-16 
J-17 	J-18 	J-19 	J-20 
J-21 	J-22 	J-23 	J-24 
J-25 	J-26 	J-27 	J-28 
J-29 	J-30 	J-31 	

SECTION 3
PERIODIC CHECK AND MAINTENANCE

It is recommended that you carry out the following periodic checks and maintenance in order to obtain good performance and ensure a long life for the unit and tape. Use the hours-meter value displayed on the front panel as a guide for determining the check timing.

3-1. MAINTENANCE AFTER REPAIRS

Carry out the following maintenance after repair without regard to the operating hours of the unit.

(1) Cleaning Rotary Upper Drum
Press a cleaning cloth moistened with cleaning fluid lightly against Rotary Upper Drum and turn the Rotary Upper Drum slowly counterclockwise by means of a hand.

Note : Never turn the Drum by means of the unit is switched. Never turn it clockwise by means of a hand. If cleaning head chip, never move the cleaning cloth in vertical direction. You damage the head chip.

(2) Cleaning the tape run system (See drawing as shown below.)
Clean the tape run system (guides TG-1 to TG-9, RVS guide, F•R guide, capstan shaft, pinch roller, audio head, and FE head) with a cleaning piece moistened with cleaning fluid.

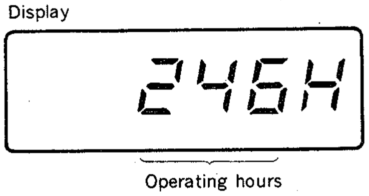
(3) Cleaning the drive system
Clean the surface of the reel table with a cleaning piece moistened with cleaning fluid.

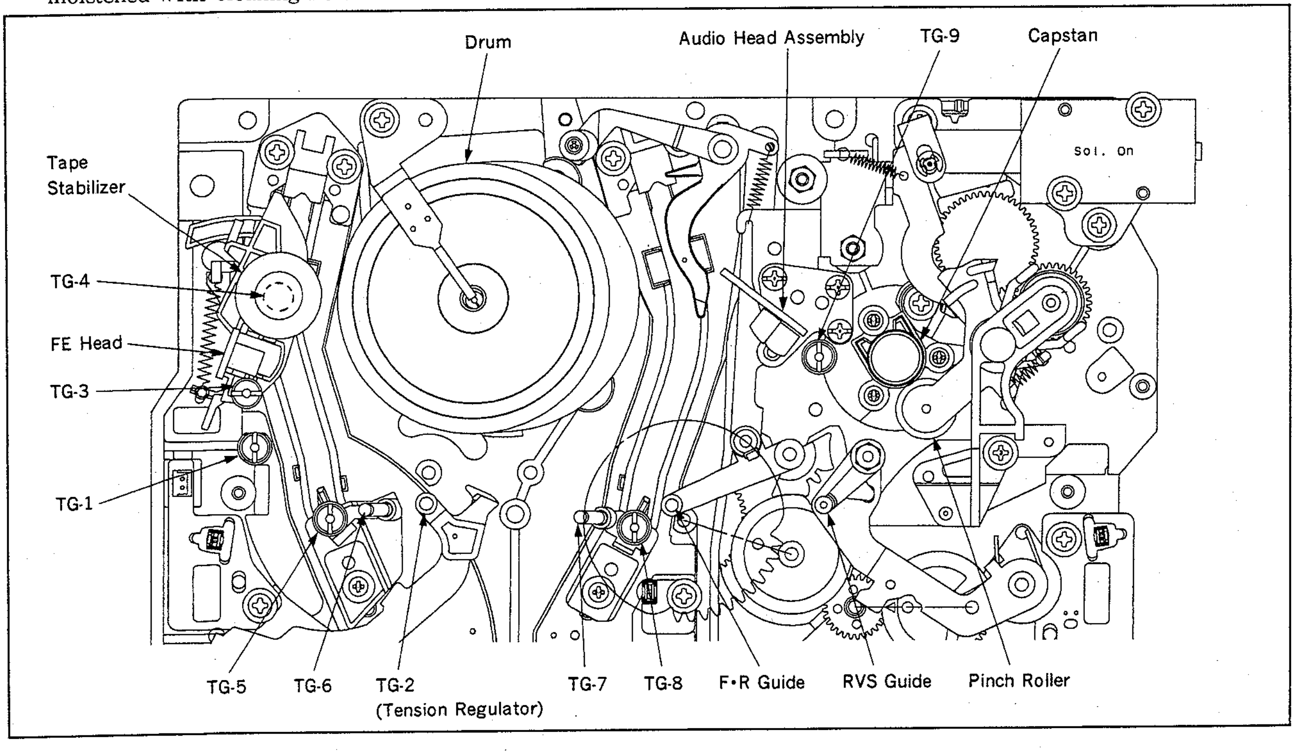
3-2. HOURS METER

The front panel display of the SVP-9020 can display the accumulated operating hours of the video heads.

- Procedure of displaying hoursmeter

1) Set the CTL/MENU switch to CTL.
2) Set the PROGRAMMED OPERATION switch to B↻A.
3) Keep the RESET button depressed for ammount 2 seconds.


Display
246H
Operating hours


Drum
Audio Head Assembly
TG-9
Capstan
Sol. On
Tape Stabilizer
TG-4
FE Head
TG-3
TG-1
TG-5
TG-6
TG-2
(Tension Regulator)
TG-7
TG-8
F•R Guide
RVS Guide
Pinch Roller

3-3. PERIODIC CHECK

Carry out periodic checks and maintenance according to operating hours of the unit.

○ : Cleaning ◆ : Replacement ◇ : Checking □ : Greasing

Item			Hours of use (H) : Hour of Drum Rotation										Reference Section
	Part Name	Part No.	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Run System	Tape Run surface	—	○	○	○	○	○	○	○	○	○	○	—
	(Note 1) Pinch Roller Block Ass'y	A-6750-279-C	○	○	○	◆/□	○	○	○	◆/□	○	○	4-12
	Audio Head Ass'y	A-6736-092-A	○	○	○	○	○	○	○	◆	○	○	4-10
	Guide Roller Ass'y	X-3165-337-1								◆			4-25,4-27
	Shaft Ground Ass'y	X-3165-584-1								◆			4-4
	FE Head	1-543-695-11	○	○	○	○	○	○	○	◆	○	○	4-8
	Capstan Motor (SCV-0401A)	8-835-480-02	○	○	○	○	○	○	○	◆	○	○	4-30
	Upper Drum Ass'y (DZR-41-R)	8-848-579-02	○	◆	○	◆	○	◆	○		○	◆	4-4
	Drum Ass'y (DZH-41A-R)	8-848-578-12	○	○	○	○	○	○	○	◆	○	○	4-5
Drive System	Brake Arm (S) Ass'y	X-3165-330-3								◆			4-18
	Brake Arm (T) Ass'y	X-3165-331-2								◆			4-18
	Reel Table Ass'y	X-3165-345-1				○				○			4-17
	LDB Arm Ass'y	X-3166-511-1								◆			4-32
	Cleaning Roller Ass'y	X-3743-515-4				◆				◆			4-3
	Reel Moter (SRV-0201A)	8-835-432-01								◆			4-19
	(Note 1) Loading Gear (Right) Ass'y	A-6750-281-A				□				□			4-22
	(Note 1) Worm Gear (Cam Motor Ass'y)	3-733-395-01				□				□			3-5
	(Note 1) Worm Gear (Cassette Compartment)	3-736-100-01				□				□			3-5
	(Note 1) Shuttle Slide Surface	—				□				□			3-5
Check Performance	Abnormal-noise	—	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇	—
	S side Tape Tension Measurement	—		◇		◇		◇		◇		◇	5-2,6-2
	Reel Table torque Measurement	—				◇				◇			5-1

Note 1 : Grease the SVP-9020 according to Sec. 3-5.

Note 2 : The period shown in the table is not a guarantee value. The parts replacement period differs depending on the environment in which the SVP-9020 is used, so take the operating environment into consideration when drawing up a maintenance and check plan.

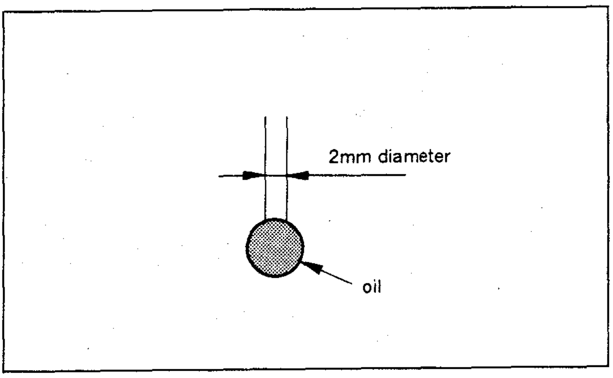
Note 3 : Be sure to clean the tape run surface after repairing it.

3-4. OILING

Oiling is described in 「SECTION 4. REPLACEMENT OF MAJOR PART」 for the applicable parts.

(1) Sony oil

- Be sure to use Sony oil. (If another brand of oil is used, the viscosity will be different, leading to trouble.)
  Sony oil : Sony part No. 7-661-018-18
- Be sure that the Sony oil used to lubricate the bearings is free of dirt and other foreign matter. (If the oil contains dirt, the bearings are liable to seize and also wear will be accelerated.)
- One drop of oil means a drop on the end of a rod of 2mm diameter (see figure).



3-5. GREASING

(1) Periodically grease the following parts.
- The face that slides against the cam of the pinch roller block ass'y (Fig. 1)
- The face that slides against the loading gear (right) ass'y (Fig. 2)
- The face that slides against the shuttle (left)/(right) ass'y (Fig. 3)
- Cam motor ass'y worm gear (Fig. 4)
- Cassette compartment worm gear (Fig. 5)

(2) Greasing
- Be sure to use the specified grease.
  MOLYKOTE grease EM-30LG (Color : green) :
  Sony part No. J-6090-014-A

or

MOLYKOTE grease EM-30L (Color : Colorless) :
DOW CORNING Corp.

Apply a small quantity of grease to the areas marked in the figure (shaded areas and other areas indicated by the arrows).

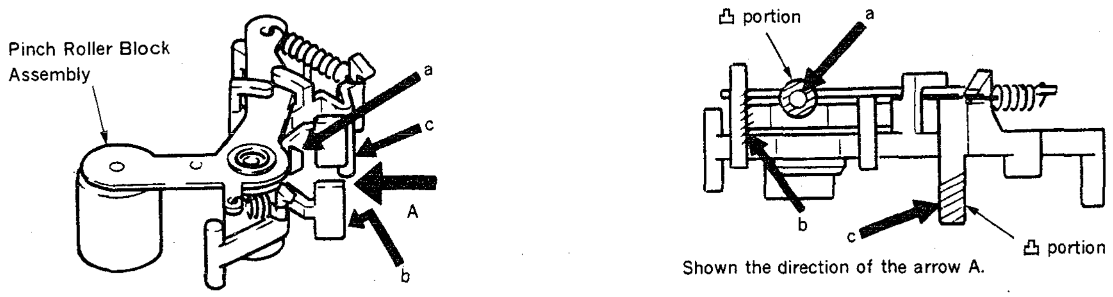

Pinch Roller Block
Assembly
a
c
A
b
凸 portion
a
b
c
凸 portion
Shown the direction of the arrow A.

Fig. 1

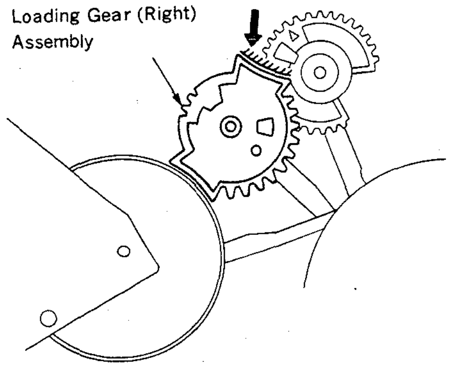

Loading Gear (Right)
Assembly

Fig. 2

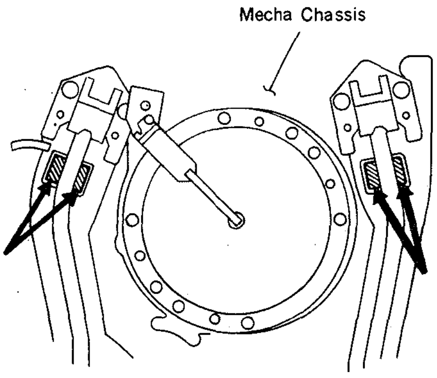

Mecha Chassis

Fig. 3

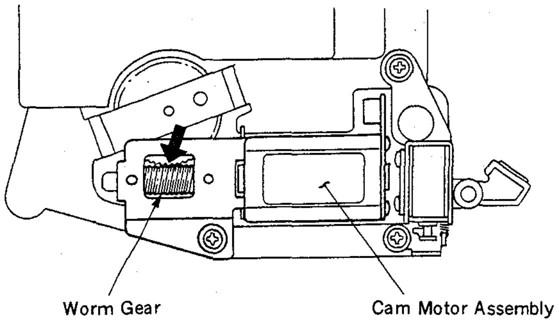

Worm Gear
Cam Motor Assembly

Fig. 4

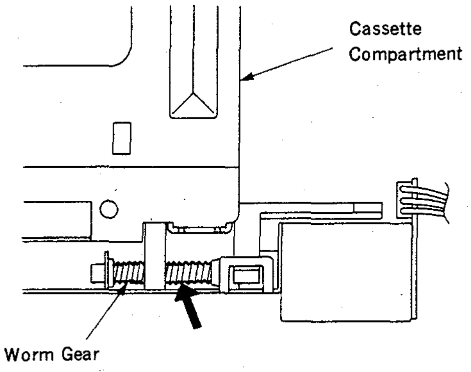

Cassette
Compartment
Worm Gear

Fig. 5

SECTION 4
REPLACEMENT OF MAJOR PART

- Refer to Sec. 2 for details of removing the externals and the printed circuit boards.
- Re-install the various parts in the opposite sequence to removal, while referring to "Note on Installation".

4-1. PREPARATIONS FOR REPLACING PARTS

- Do not load or thread a cassette when the SVP-9020 is inverted.

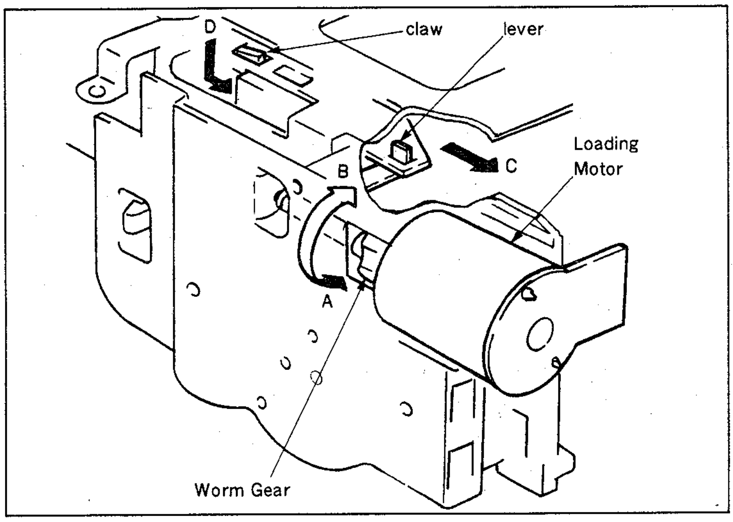
4-1-1. Method of loading and unloading the cassette compartment when the power is OFF

[Loading]

- Push the lever in the direction of arrow C and release the claw (direction of arrow D), then rotate the worm gear in the direction of arrow B manually until loading is completed.
  (When a cassette tape is loaded in the cassette compartment, the claw will automatically release.)

[Unloading]

- Rotate the worm gear in the direction of arrow A manually until unloading is completed.


D
claw
lever
Loading Motor
B
C
A
Worm Gear

4-1-2. Method of threading and unthreading when the power is OFF

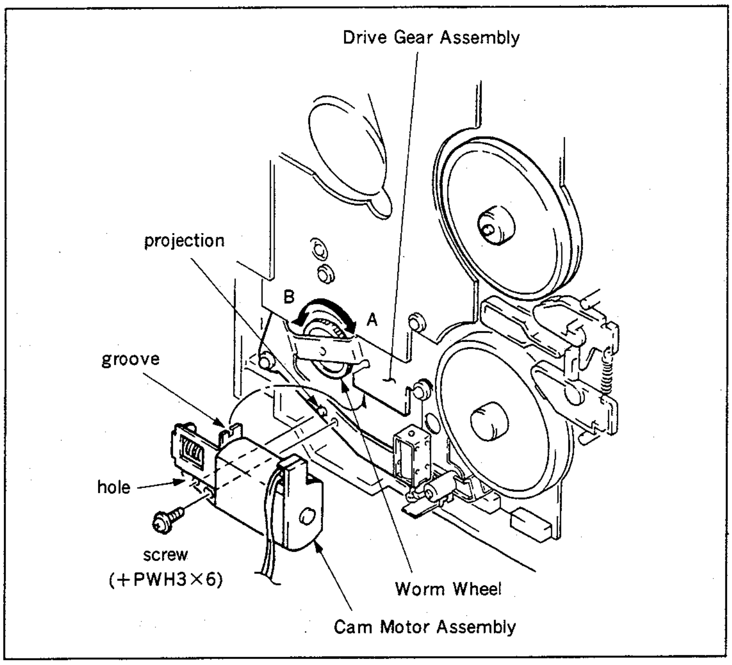
(1) Remove the screws, then remove the cam motor ass'y from the drive gear ass'y.

[Threading]

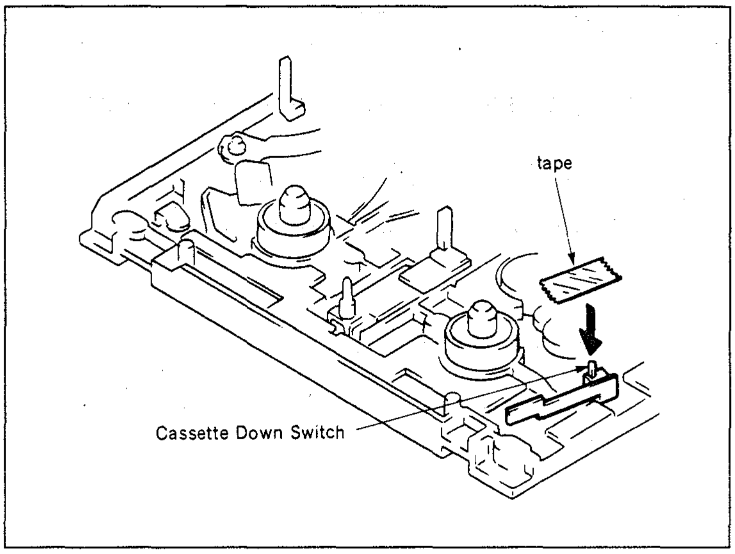
- Rotate the worm wheel manually in the direction of arrow A until threading is completed.

[Unthreading]

- Rotate the worm wheel manually in the direction of arrow B until unthreading is completed.


Drive Gear Assembly
projection
B
A
groove
hole
screw
(+PWH3×6)
Worm Wheel
Cam Motor Assembly

4-1-3. Method of operating SVP-9000 without a cassette compartment or cassette tape



(1) Remove the cassette compartment according to Sec. 2-2.
(2) Turn ON No. 8 switch of DIP switch S101/SS-49 board (J-9). (This is to neutralize the tape top/end sensor function)
(3) Push down the CASSETTE DOWN switch with tape, etc.
(4) Turn the POWER switch ON.

In this condition, the SVP-9020 can be also operated by the remote controller (SVRM-100, RM-V200, RM-V100, etc.)

Note: Be sure to turn No. 8 switch OFF after completion of operation.

[Operating the SVP-9020 with the cassette compartment removed and a cassette tape loaded]
- Be sure to turn OFF No. 8 switch of DIP switch S101.
  (If the DIP switch is turned ON, the tape will not stop at the tape top/end, resulting in possible damage to the head tip and deformation of the tape guide.)

4-1-4. How to get the best engaging phase of gears when replacing

A hole and/or a mark is added on each gear in this mechanism deck so that the engaging phases of the gears are easy to get when assembling. When replacing gear, install it as shown below, also refer the figures 1 and 2. (The replacement should be performed on the STOP mode.)

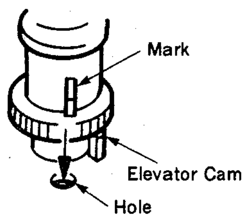
①	 Mark Elevator Cam Hole Match the mark of the elevator cam and the hole of the chassis. (Ref. 4-13)
②	Match the holes of the pressure cam gear and the chassis. (Ref. 4-13)
③	Match the holes of RVS cam gear and the chassis. (Ref. 4-14)
④	Match the holes of FR drive gear and the mode gear (2). (Ref. 4-16)

Figure of mechanism: STOP mode without the cassette compartment.

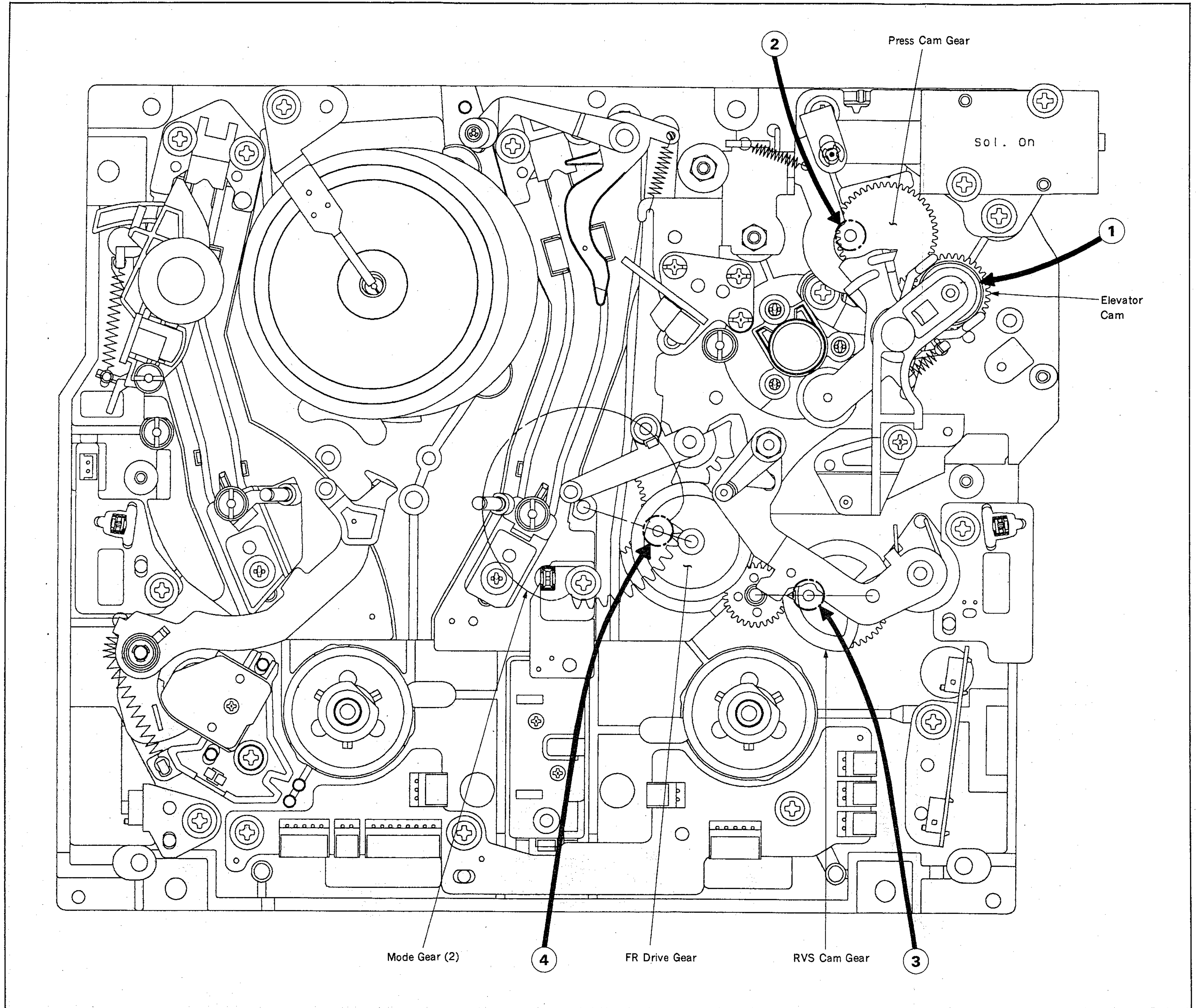

2
Press Cam Gear
Sol. On
1
Elevator Cam
Mode Gear (2)
4
FR Drive Gear
RVS Cam Gear
3

Fig. 1 Top View

Figure of mechanism: STOP mode

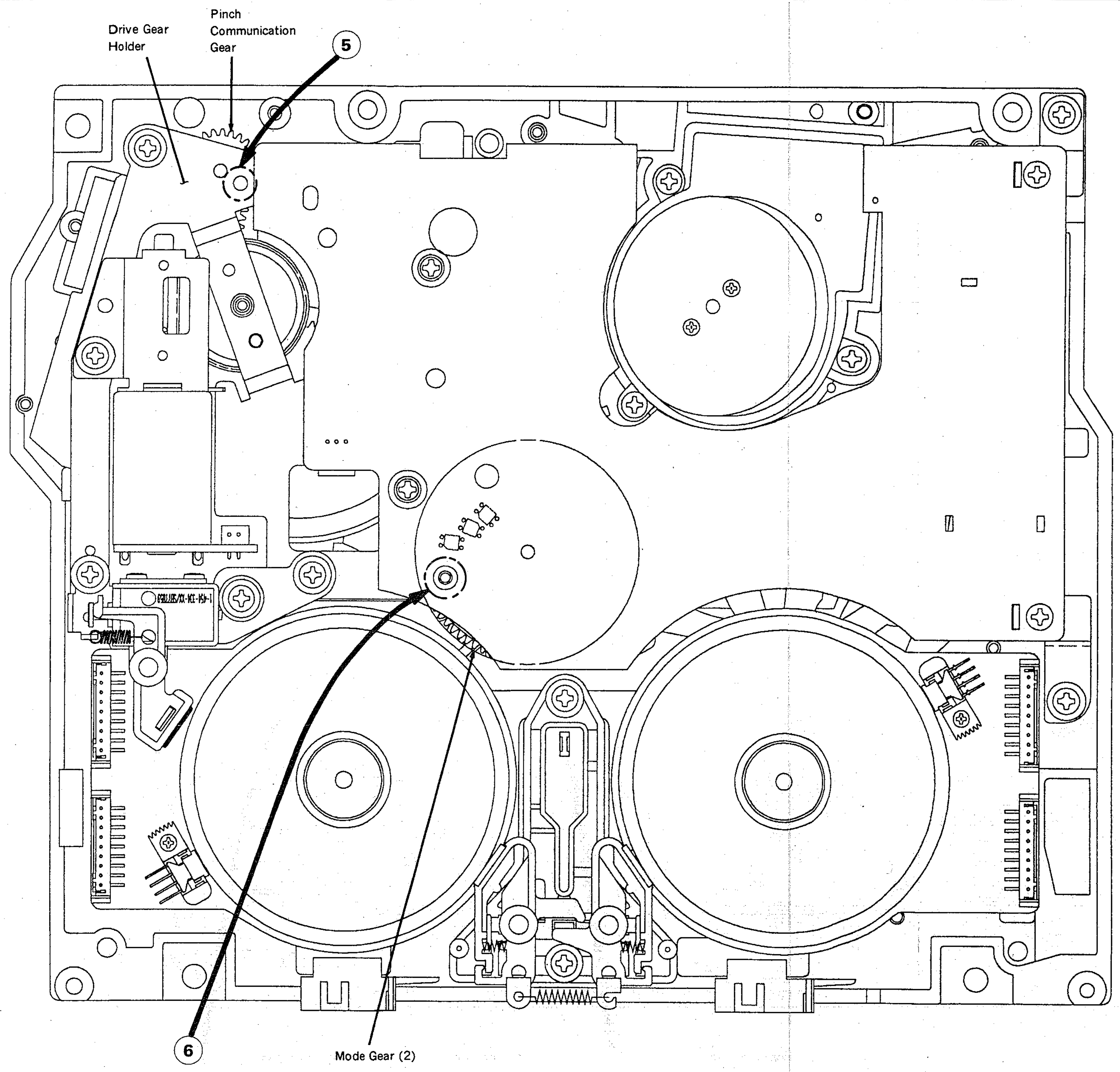

Drive Gear Holder
Pinch Communication Gear
5
6
Mode Gear (2)

Fig. 2 Bottom View

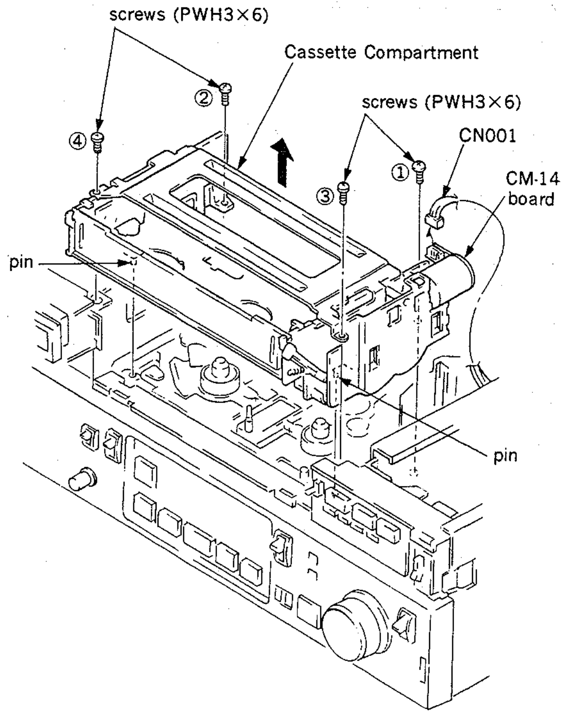
⑤	Match the holes of the pinch communication gear and the drive gear holder. (Ref. 4-20)
⑥	Match the holes of the mode gear (2) and the drive gear holder. (Ref. 4-20)

4-2. CASSETTE COMPARTMENT (FL ASS'Y) REPLACEMENT

(1) Disconnect connector CN001 from the CM-14 board.
(2) Remove the four screws, and remove the cassette compartment (FL ass'y) in the direction of the arrow.

Note on installation

①Align the two pins of the cassette compartment with the holes in the base plate.
②Tighten the screws in the order of Steps ① to ④.


screws (PWH3×6)
Cassette Compartment
screws (PWH3×6)
CN001
CM-14 board
②
④
③
①
pin
pin

4-2-1. Prevention lever replacement

(1) Remove the spring.
(2) Remove the claw, and move the prevention lever in the direction of arrow A.
(3) Remove the prevention lever in the direction of arrow B.

Note on installation

①The shaft of the prevention lever must enter the groove in the drive arm (left). (Fig. 2)

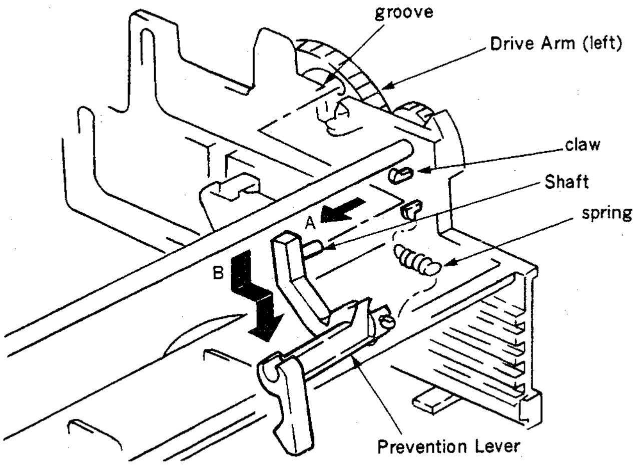

groove
Drive Arm (left)
claw
Shaft
spring
A
B
Prevention Lever

Fig. 1

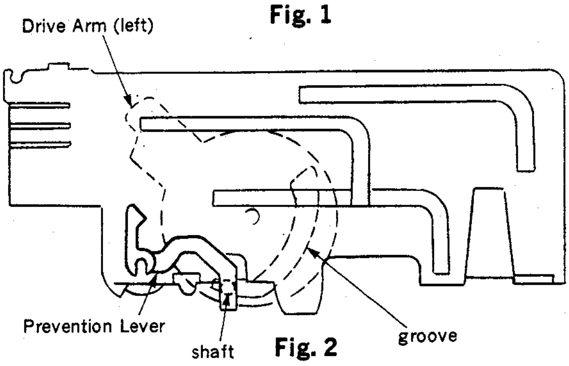

Drive Arm (left)
Prevention Lever
shaft
groove

Fig. 2

4-2-2. Loading motor, worm gear (FL), worm wheel (FL) and worm retainer replacement

(1) Remove the four claws, then remove the gear cover ass'y. (Fig. 1)
(2) Remove the stop washer 3, then pull out the worm wheel (FL). (Fig. 2)
(3) Remove the two screws, then remove the loading motor. (Fig. 2)
(4) Remove the worm gear (FL) and the worm retainer. (Fig. 2)

Note on installation

①To install the gear cover ass'y, obtain a shaft of 2mm diameter and length of at least 30mm.
Pass the shaft through the holes in the gear cover ass'y, worm wheel (FL), drive arm (right) ass'y and right side plate, and engage the gear cover ass'y with the claw.

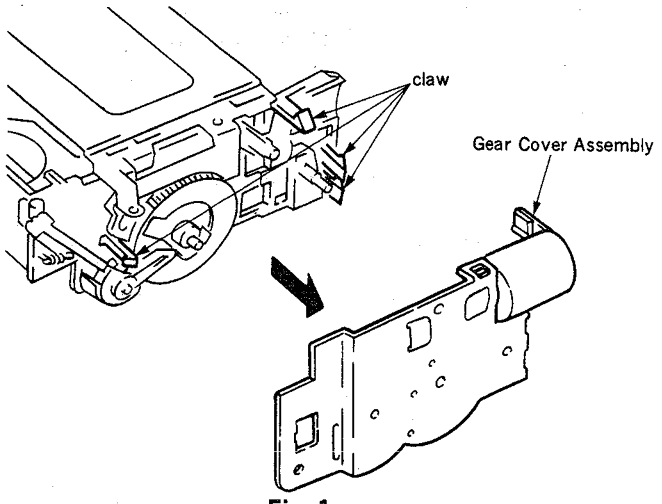

claw
Gear Cover Assembly

Fig. 1

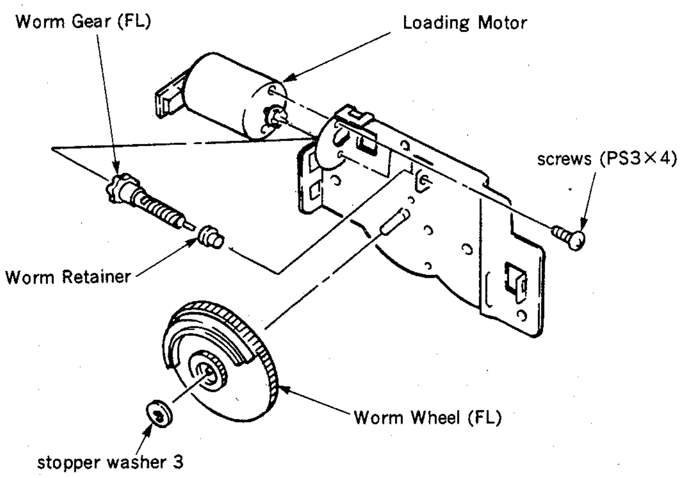

Worm Gear (FL)
Loading Motor
screws (PS3×4)
Worm Retainer
Worm Wheel (FL)
stopper washer 3

Fig. 2

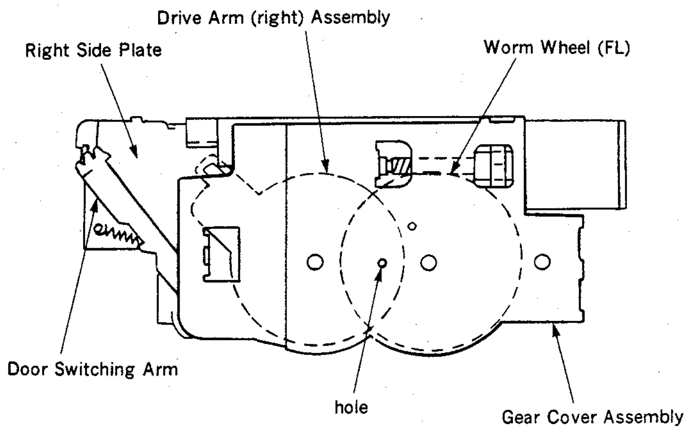
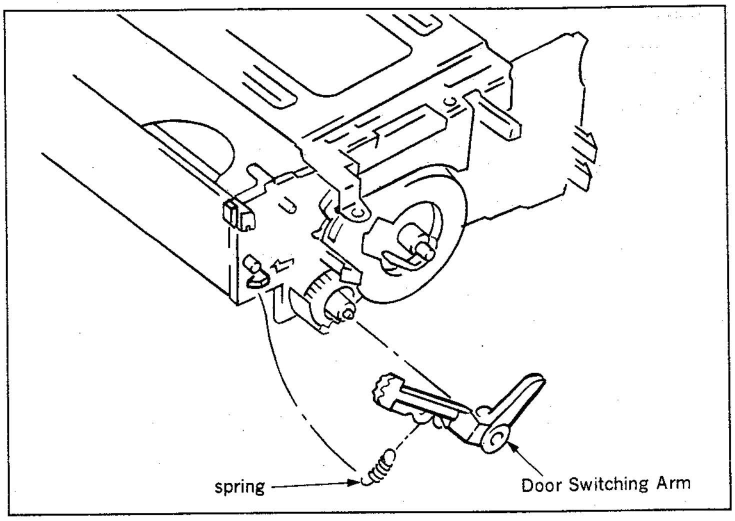

Drive Arm (right) Assembly
Right Side Plate
Worm Wheel (FL)
Door Switching Arm
hole
Gear Cover Assembly

Fig. 3

4-2-3. Door switching arm replacement

(1) Remove the spring.
(2) Pull out the door switching arm.


spring
Door Switching Arm

4-3. BC ROLLER ASS'Y REPLACEMENT

(1) Remove the spring from the notch in the ACE head base.
(2) Remove the stop washer (4 mm dia.), then remove the BC roller ass'y. (Fig. 1)

Note on installation

①Ensure that the opening of the hook is uppermost. (Fig. 2)
②Take care not to scratch the drum.
③Install the BC roller ass'y in such a way that the extremity enters the part of the shuttle holder indicated by the arrow in Fig. 2.

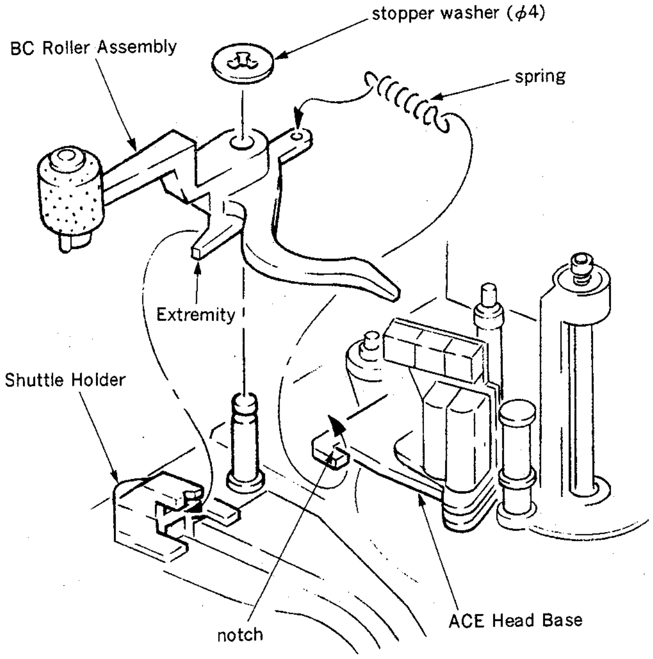

stopper washer (ϕ4)
BC Roller Assembly
spring
Extremity
Shuttle Holder
notch
ACE Head Base

Fig. 1

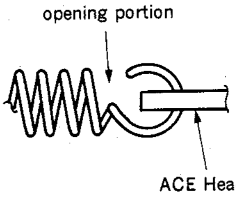

opening portion
ACE Head Base

Fig. 2

4-4. UPPER DRUM ASS'Y REPLACEMENT

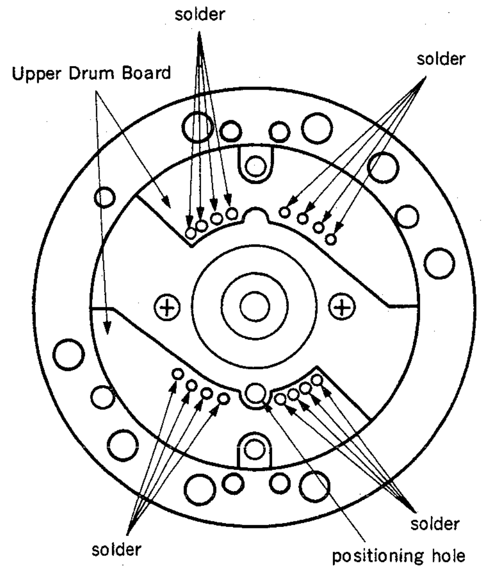
Tools :
Alignment tape (KRV-4821PSA)
Alignment tape (KRV-45HPS)
Alignment tape (JVC-MH-2)
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Box screwdriver (width 5.5mm)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Oscilloscope
Connecting cable (Refer to Sec. 6-9)
S-VHS cassette tape (T-160 and T-120)

(1) Remove the screw, then remove the shaft ground ass'y.
(2) Unsolder the sixteen points on the upper drum board shown in Fig. 1.
(3) Remove the two screws, then remove the upper drum ass'y.

Note on installation

①Do not touch the head tip and the contact of the shaft ground ass'y manually or a tool.
②Clean the surface of the drum shaft that touches the contact of the shaft ground ass'y, using cleaning fluid.
③Install the contact of the shaft ground ass'y at roughly the center of the drum shaft.
④Align the locating hole of the upper drum ass'y with this of the lower drum ass'y, then install the upper drum ass'y.
⑤The tightening torque for installing the upper drum ass'y must be 590×10^{-3}N•m (6kg•cm).

[**Adjustment after replacing the upper drum ass'y**]
- See next page.


solder
Upper Drum Board
solder
solder
solder
positioning hole

Upper Drum Assembly (Top View)

Fig. 1

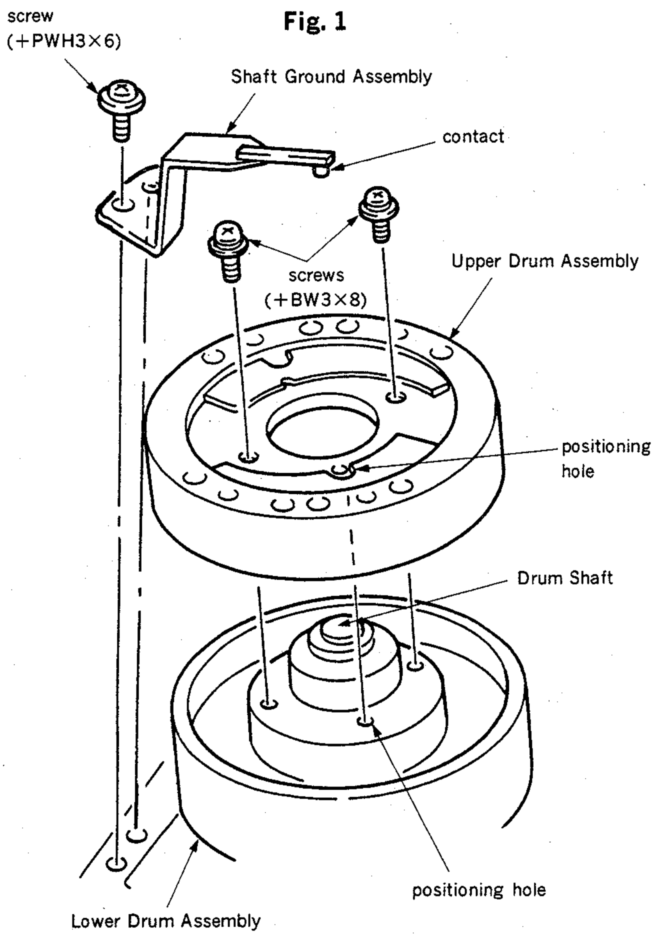
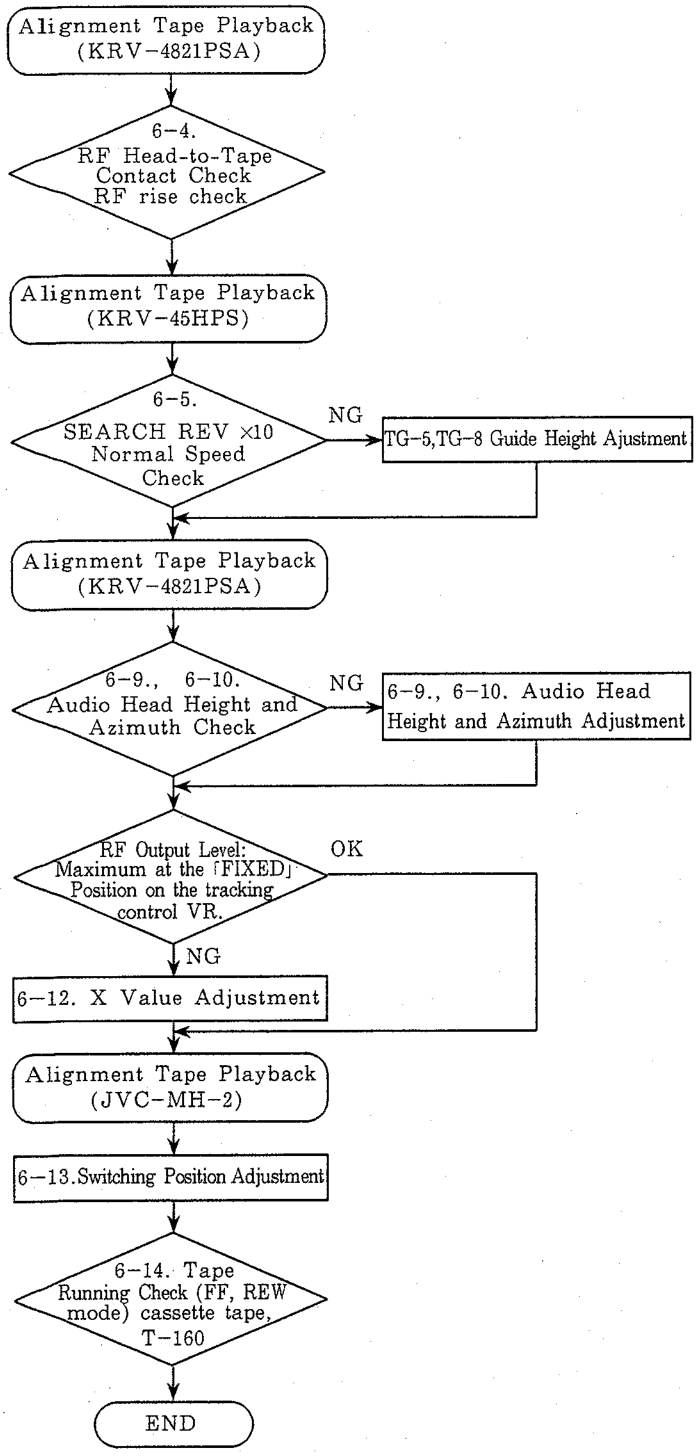

screw
(+PWH3×6)
Shaft Ground Assembly
contact
screws
(+BW3×8)
Upper Drum Assembly
positioning hole
Drum Shaft
positioning hole
Lower Drum Assembly

Fig. 2

[**Adjustment after replacing the upper drum ass'y**]

- Refer to Sec. 6, perform the Tape Run Alignment.



Alignment Tape Playback (KRV−4821PSA)
6−4. RF Head-to-Tape Contact Check RF rise check
Alignment Tape Playback (KRV−45HPS)
6−5. SEARCH REV ×10 Normal Speed Check
NG
TG−5,TG−8 Guide Height Ajustment
Alignment Tape Playback (KRV−4821PSA)
6−9., 6−10. Audio Head Height and Azimuth Check
NG
6−9., 6−10. Audio Head Height and Azimuth Adjustment
RF Output Level: Maximum at the 「FIXED」 Position on the tracking control VR.
OK
NG
6−12. X Value Adjustment
Alignment Tape Playback (JVC−MH−2)
6−13.Switching Position Adjustment
6−14. Tape Running Check (FF, REW mode) cassette tape, T−160
END

4-5. DRUM ASS'Y REPLACEMENT

Tools :

Alignment tape (KRV-4821PSA)
Alignment tape (KRV-45HPS)
Alignment tape (JVC-MH-2)
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Box screwdriver (width 5.5mm)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Oscilloscope
Connecting cable (See Sec. 6-9.)
S-VHS cassette tape (T-160 and T-120)

(1) Remove the drum harness from the RP board. (Fig. 1)
(2) Remove the screw, then remove the shaft ground ass'y. (Fig. 2)
(3) Disconnect connector CN604 from the drum ass'y. (Fig. 2)
(4) Remove the three screws, then remove the drum ass'y. (Fig. 2)

Note on installation

①Do not touch the head tip and the contact of the shaft ground ass'y manually or a tool.

②Clean the following parts with cleaning fluid.
- The surface of the drum shaft that touches the ground contact of shaft ground assembly.
- The mounting faces of the drum ass'y and the chassis.
- The surface of the drum ass'y over which the tape travels

③Align the holes (two) in the drum ass'y with the pins (two) on the chassis, then install the drum ass'y.

④The tightening torque of the mounting screws of the drum ass'y must be 392×10^{-3} to 490×10^{-3} N•m (4 to 5 kg•cm).

⑤Connect the drum harness to the RP board while being careful of the direction of the conductor side.

[**Adjustment after Replacing the Drum Ass'y**]
See Sec. 4-4. [Same as the method of performing adjustment after replacing the upper drum ass'y]

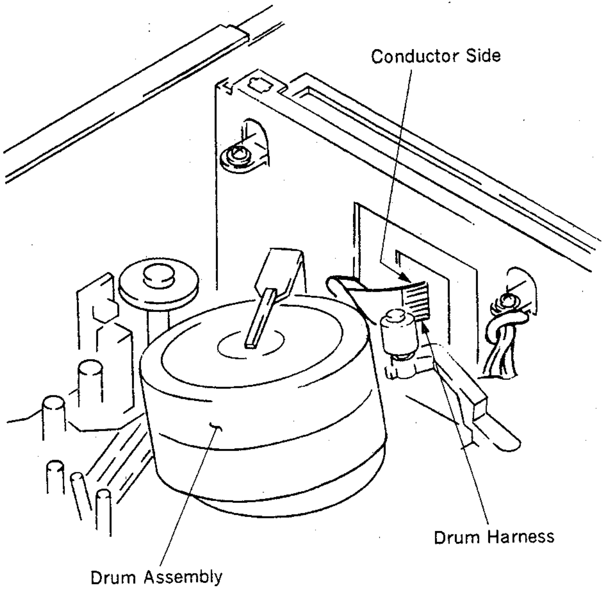


Fig. 1

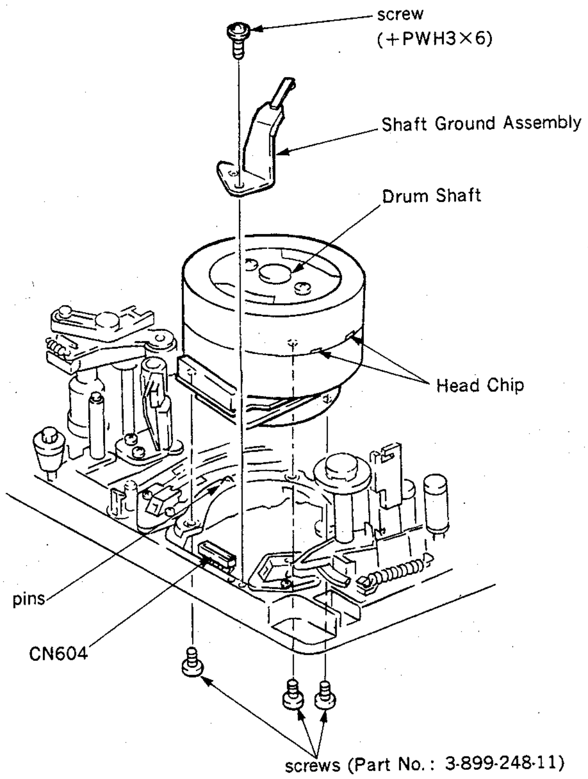


Fig. 2

4-6. TG-1 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw by inserting the hex wrench into the hole in the chassis (left). (Fig. 1)
(3) Rotate the TG-1 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

[Installation and height adjustment]

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it against the TG-1 guide from the direction shown in the drawing, and tighten the set screw until the lower flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Set screw tightening torque : 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))
(6) Turn the flange of the guide with the guide adjustment screwdriver until the required specification is satisfied. (Fig. 3)
(7) Perform tape run adjustment of Sec. 6.

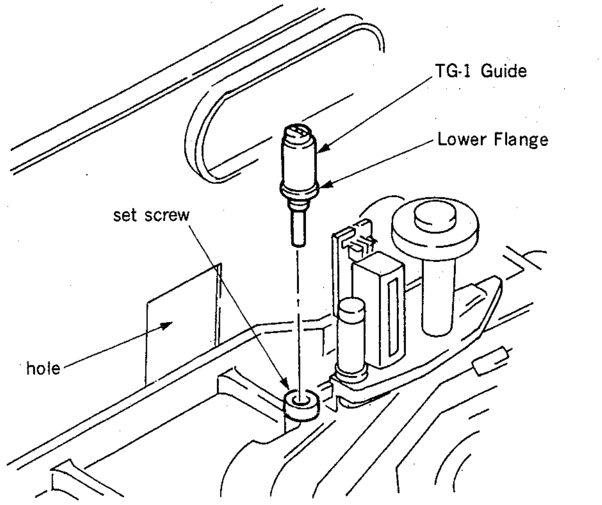

TG-1 Guide
Lower Flange
set screw
hole

Fig. 1

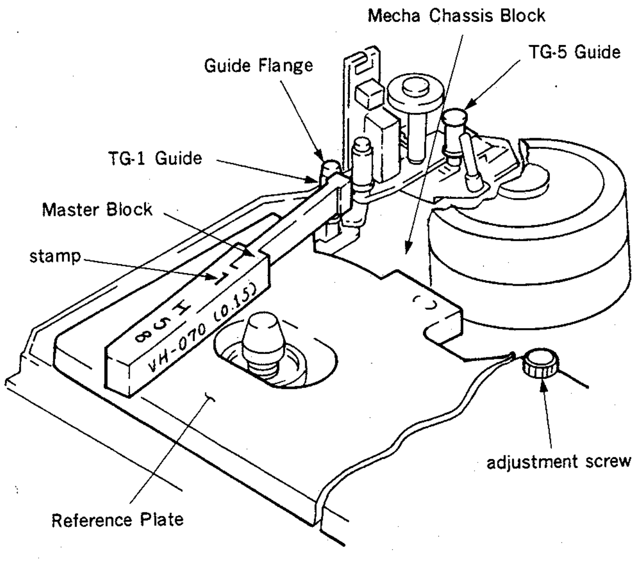

Mecha Chassis Block
Guide Flange
TG-5 Guide
TG-1 Guide
Master Block
stamp
L1
H
5
8
VH-070 (0.15)
adjustment screw
Reference Plate

Fig. 2

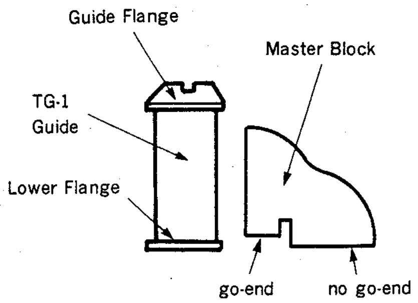

Guide Flange
Master Block
TG-1 Guide
Lower Flange
go-end
no go-end

Fig. 3

Spec. :
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

4-7. TENSION REGULATOR ASS'Y (TG-2 GUIDE) AND STD ASS'Y REPLACEMENT

Tools :
Oscilloscope
Tentelometer (T2-H7-UMC)
Digital voltmeter
S-VHS cassette tape (T-120)
Sony oil (7-661-018-18)
Locking compound

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Disconnect connector CN657Y from the HN-160 board.
(3) Remove the spring from the STD ass'y.
(4) Remove stop washer 2.3 and also the screw.
(5) Remove the tension regulator ass'y and STD ass'y together.
(Take care not to lose the poly-slider-washer.)

Note on installation

①Clean the shaft with cleaning fluid, and apply 1/2 a drop of Sony oil. (Fig. 1)
②Insert the slit arm of the tension regulator ass'y into the slit in the STD ass'y, then install the resulting ass'y on the shaft. (Fig. 1)
③Align the U groove and longitudinal hole of the STD ass'y with bosses **a** on the chassis (Fig. 1), then install the STD ass'y in such a way that the adjustment groove comes to a point mid-way between bosses **b**. (Fig. 2)

[Adjustment after replacement]

Mechanical adjustment of position of tension regulator ass'y

(1) Connect the oscilloscope as follows.
CH-1 (DC range) : TP301/SS-49 board (C-9)
(2) Turn ON No. 8 switch of DIP switch S101/SS-49 board (J-9). (Fig. 3)
(3) Keep the cassette down switch pressed down with finger. (Fig. 3)
(4) Turn ON the POWER switch.
(5) Press the PLAY button of the unit for the threading completion mode (rotate the drum).
(6) Remove a finger from the cassette down switch.

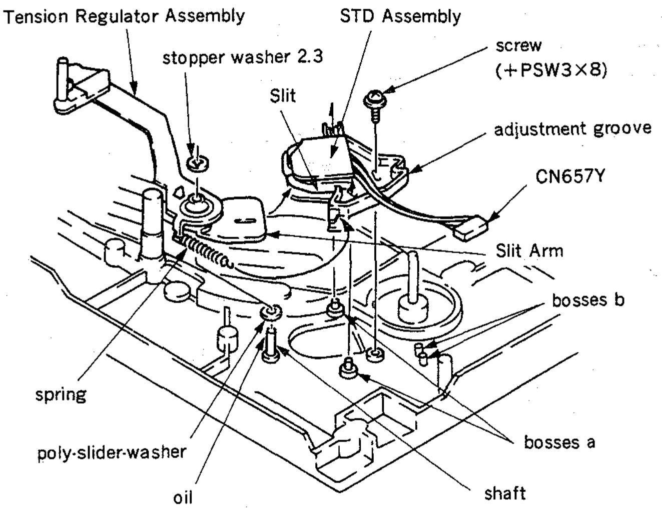

Tension Regulator Assembly
STD Assembly
stopper washer 2.3
screw
(+PSW3×8)
Slit
adjustment groove
CN657Y
Slit Arm
bosses b
spring
bosses a
poly-slider-washer
oil
shaft

Fig. 1

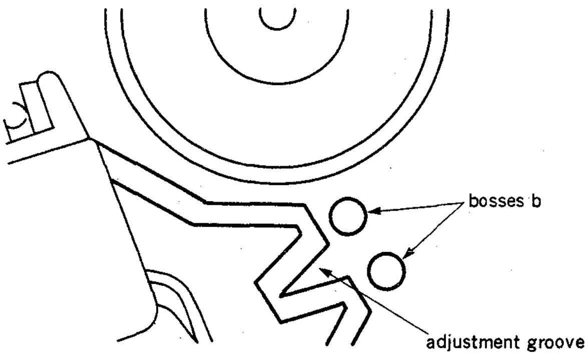

bosses b
adjustment groove

Fig. 2

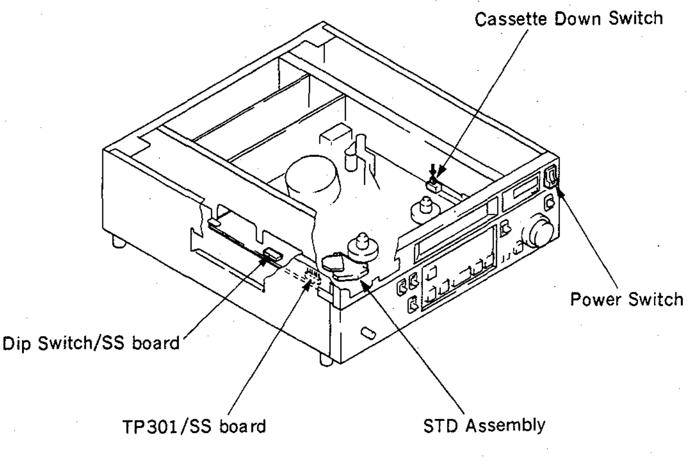

Cassette Down Switch
Power Switch
Dip Switch/SS board
TP301/SS board
STD Assembly

Fig. 3

(7) Loosen the screw of the STD ass'y by about 90°.

(8) Insert a screwdriver into the position shown in Fig. 4, then move the STD ass'y in the direction of arrows A and B, and set it to the position where the DC voltage of TP301 is minimum.

(9) Move the STD ass'y slightly in the direction of arrow C, and tighten the screw until the DC voltage of TP301 is within the specification range. (Fig. 4)

(10) Confirm that when the tension regulator ass'y is moved in the direction of the arrow D, the DC voltage of TP301 increases in direct proportion. (Fig. 5)

(11) Press the STOP button of the unit for the un-threading completion mode.

(12) Turn OFF No. 8 switch of the DIP switch.

(13) Smear the screw of the STD ass'y with locking compound. (Fig. 4)

Tape tension adjustment

(14) Perform tape tension adjustment according to Sec. 6-2.

Tape run adjustment

(15) Perform tape run adjustment of Sec. 6.

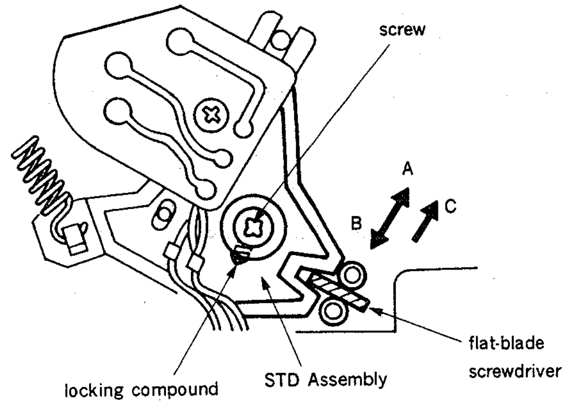
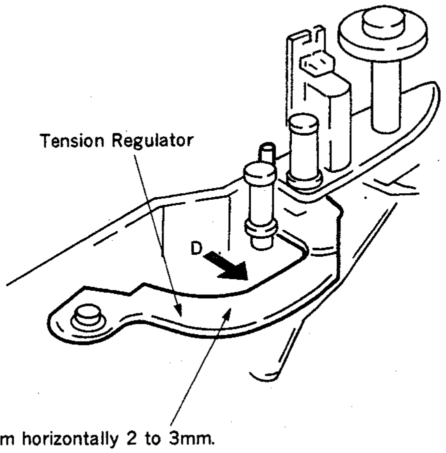


Fig. 4

Spec. :
DC voltage of TP301
min. to min. +0.2V



Push arm horizontally 2 to 3mm.
Note: Do not apply force in the vertical direction.

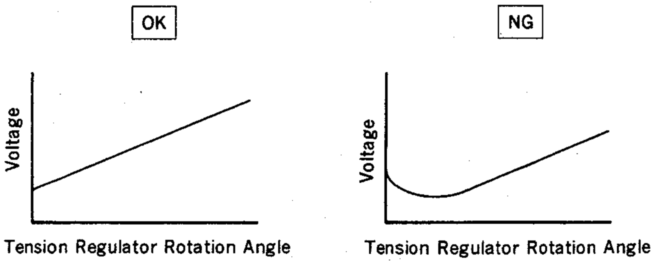


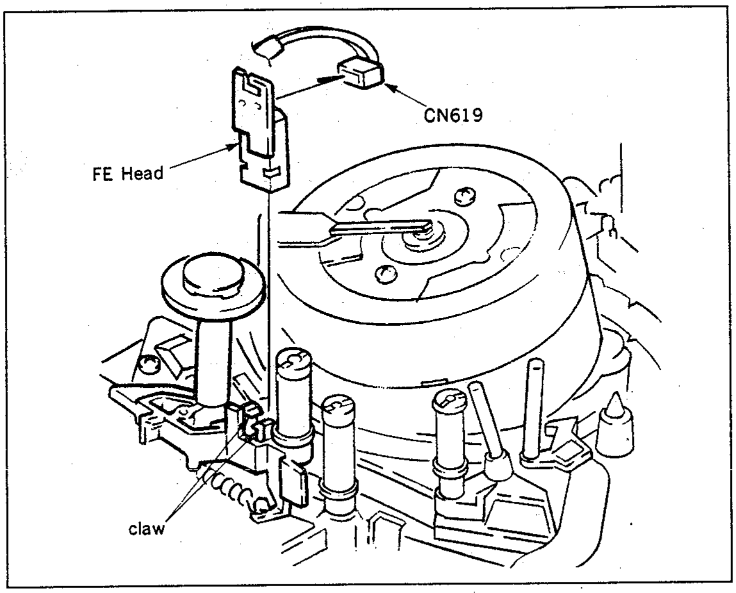
Fig. 5

4-8. FE HEAD REPLACEMENT

(1) Disconnect connector CN619 from the head board.
(2) Remove the two claws, then remove the FE head.

Note on installation

①Push in the FE head until the two claws lock into place.


CN619
FE Head
claw

4-9. TAPE STABILIZER ASS'Y (TG-4 GUIDE) AND TG-3 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Remote controller (SVRM-100 or RM-V100 or RM-V200)
Sony oil (7-661-018-18)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the FE head according to Sec. 4-8.
(3) Remove the tension coil spring.
(4) Remove stop washer 1.5, then remove the compression coil spring.
(5) Remove the tape stabilizer ass'y from the chassis.

Tape stabilizer (TG-4 guide)

(6) Remove the three claws, then remove the TS shaft retainer.
(7) Remove the stop ring, then remove the tape stabilizer.

TG-3 guide

(8) Turn the TG-3 guide counterclockwise with a guide adjustment screwdriver, and remove it.

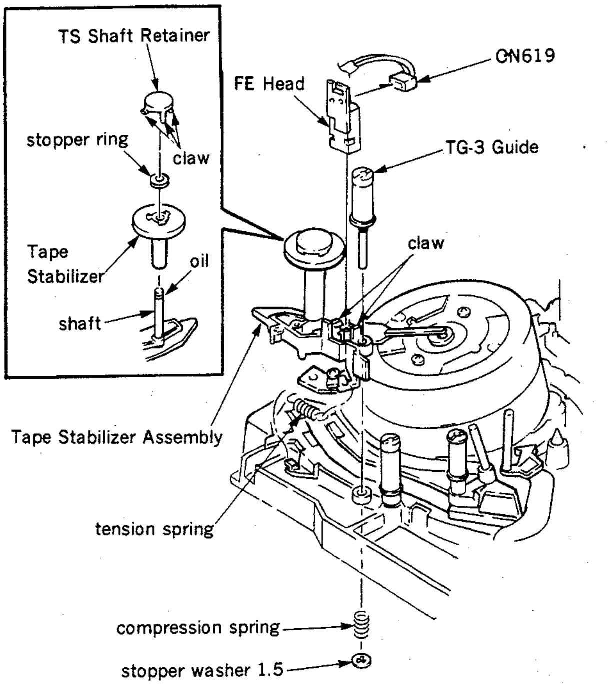

TS Shaft Retainer
stopper ring
claw
Tape Stabilizer
oil
shaft
FE Head
CN619
TG-3 Guide
claw
Tape Stabilizer Assembly
tension spring
compression spring
stopper washer 1.5

Fig. 1

Note on installation

①Clean the mounting shaft of the tape stabilizer with cleaning fluid, then apply 1/3 of a drop of Sony oil.

②Install the TG-3 guide to the height shown in Fig. 2.

[**Adjustment after replacement**]

TG-3 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) Set the master block with the stamped L3 face upward, then place it against the TG-3 guide from the direction shown in the drawing, and confirm that the height of the lower flange satisfies the specification. (Figs. 3 and 4)

If the specification is not satisfied

(6) Turn the flange of the TG-3 guide with the guide adjustment screwdriver.

(7) Perform tape run adjustment of Sec. 6.

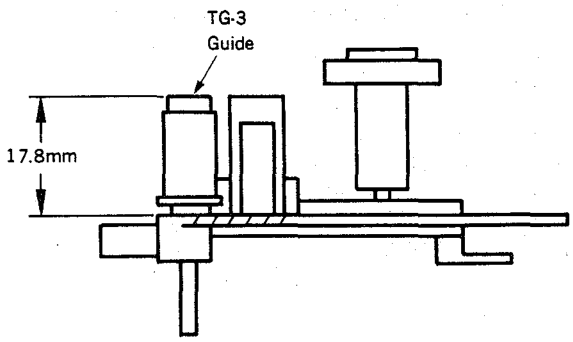

TG-3
Guide
17.8mm

Fig. 2

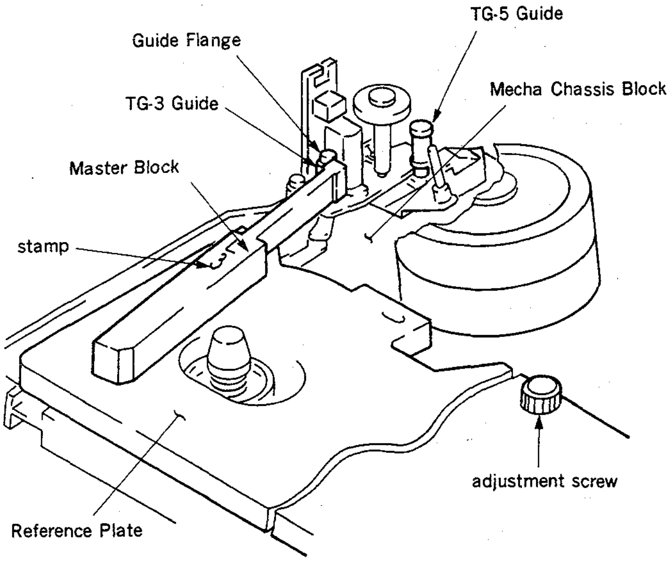

TG-5 Guide
Guide Flange
Mecha Chassis Block
TG-3 Guide
Master Block
stamp
adjustment screw
Reference Plate

Fig. 3

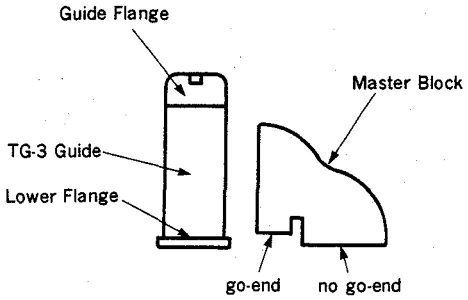

Guide Flange
Master Block
TG-3 Guide
Lower Flange
go-end
no go-end

Fig. 4

Spec.:
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

4-10. AUDIO HEAD ASS'Y REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Box screwdriver (width 5.5mm)
Thickness gauge (9-911-053-00)
Remote controller (SVRM-100 or RM-V100 or RM-V200)
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Disconnect connectors CN616, 617 and 618 from the AH board.
(3) Remove the tension coil spring A and B.
(4) Remove the AC adjustment screw.
(5) Remove the adjustment nut, then pull out the audio head ass'y.

Note on installing the audio head

①Insert part **a** of the torsion coil spring into the hole in the chassis, then insert part **b** into the bend in the ACE base ass'y. (Fig. 1)
②Smear grease onto the bend portion that the ACE base ass'y touch the AC adjustment screw. (Fig. 1)
③Install the audio head ass'y and the AC adjustment screw to the height shown in Fig. 3.

[**Adjustment after replacement**]

Audio head zenith adjustment

(1) Push the PLAY button of the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it gently against the audio head from the direction shown in the drawing (Fig. 2).

Caution : Take care not to damage the surface of the audio head.

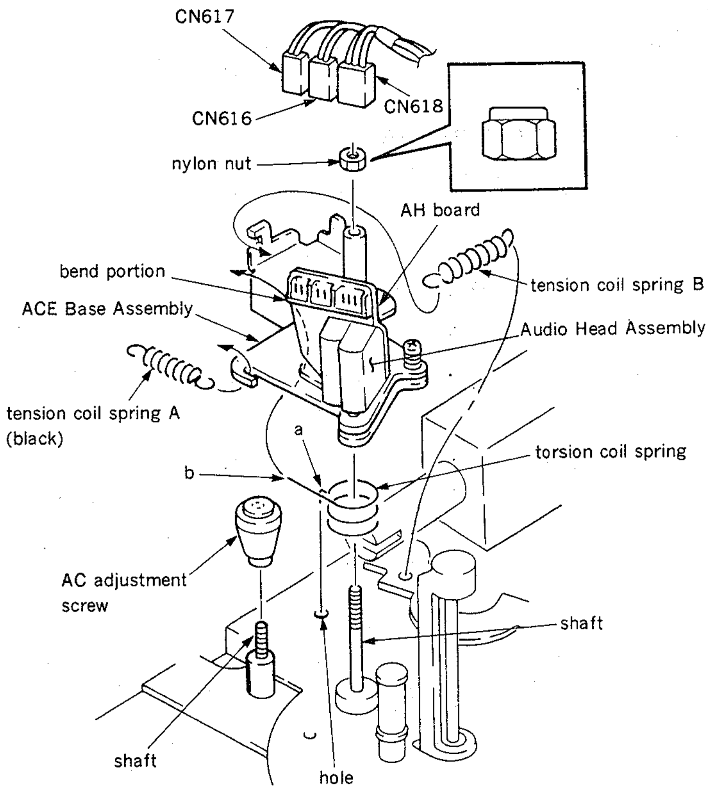

CN617
CN616
CN618
nylon nut
AH board
bend portion
ACE Base Assembly
tension coil spring B
Audio Head Assembly
tension coil spring A (black)
a
b
torsion coil spring
AC adjustment screw
shaft
shaft
hole

Fig. 1

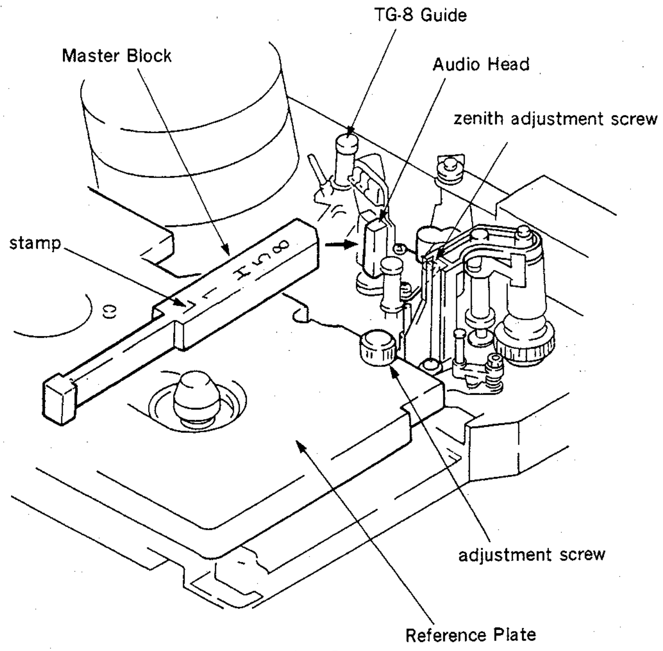

TG-8 Guide
Master Block
Audio Head
zenith adjustment screw
stamp
L1
adjustment screw
Reference Plate

Fig. 2

(6) Tilt the head with the zenith adjustment screw until gap A satisfies the specification. (Fig. 4)

Audio head azimuth adjustment

(7) Change the orientation of the master block and place it against the side of the audio head from the direction shown in the drawing. (Fig. 5)

(8) Turn the azimuth adjustment screw so that gaps B and C satisfy the specification. (Fig. 6)

(9) Confirm that the zenith specification is satisfied.

If the specification is not satisfied

(10) Repeat the zenith and azimuth adjustments until the relevant specifications are satisfied.

Tape run adjustment

(11) Perform tape run adjustment of Sec. 6.

- Upon completion of adjustment, smear locking compound onto the AC adjustment screw, zenith adjustment screw and the azimuth adjustment screw. (Fig. 7)

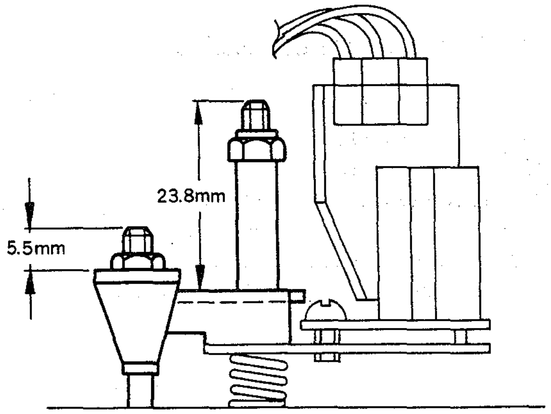


Fig. 3

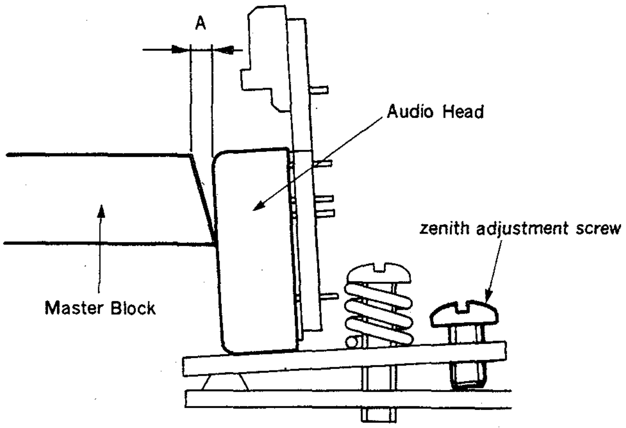

A
Audio Head
zenith adjustment screw
Master Block

Fig. 4

Spec. :
gap A=0 to 0.05mm

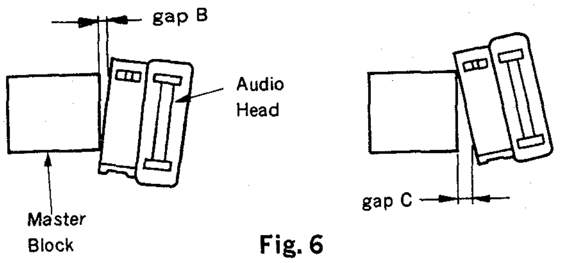

gap B
Audio Head
Master Block
gap C

Fig. 6

Spec. :
gap B, C=0 to 0.05mm

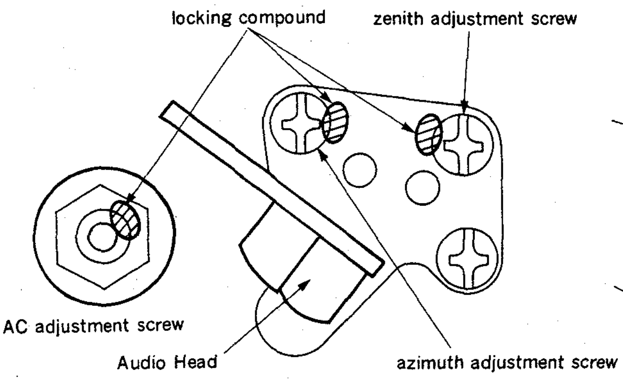

locking compound
zenith adjustment screw
AC adjustment screw
Audio Head
azimuth adjustment screw

Fig. 7

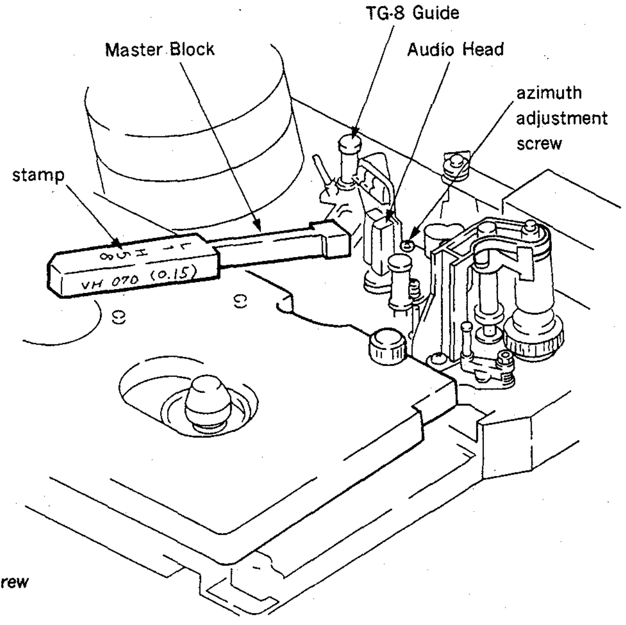

TG-8 Guide
Master Block
Audio Head
azimuth adjustment screw
stamp
VH 070 (0.15)

Fig. 5

4-11. TG-9 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw by the hex wrench. (Fig. 1)
(3) Rotate the TG-9 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

[Installation and height adjustment]

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting points on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the stamped L1 face upward, then place it against the TG-9 guide from the direction shown in the drawing, and tighten the set screw until the lower flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Set screw tightening torque: 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))
(6) Turn the flange of the guide with the guide adjustment screwdriver until the required specification is satisfied. (Fig. 3)
(7) Perform tape run adjustment of Sec. 6.

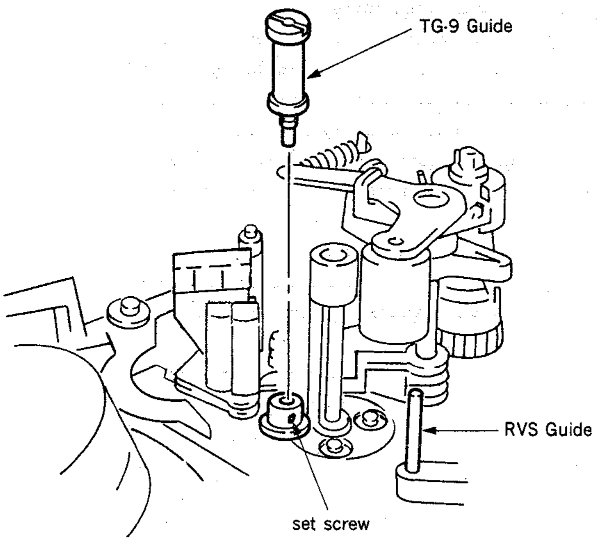

TG-9 Guide
RVS Guide
set screw

Fig. 1

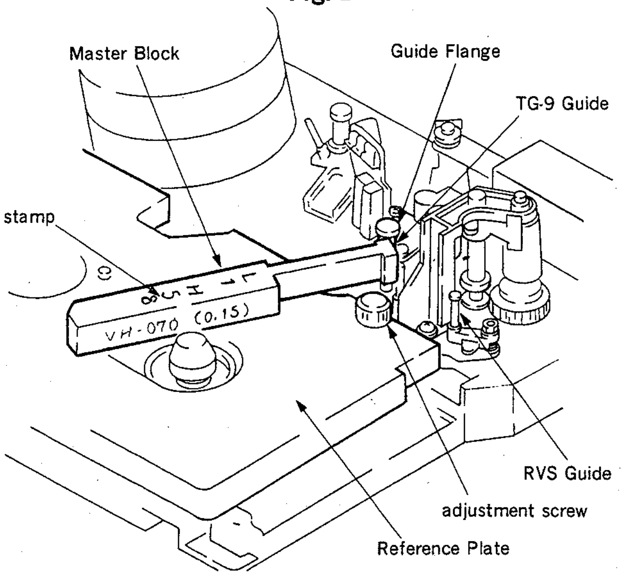

Master Block
Guide Flange
TG-9 Guide
stamp
VH-070 (0.15)
RVS Guide
adjustment screw
Reference Plate

Fig. 2

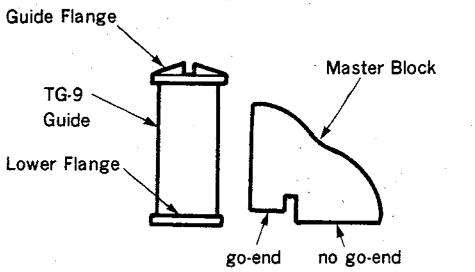

Guide Flange
TG-9 Guide
Lower Flange
Master Block
go-end
no go-end

Fig. 3

Spec. :
The height of the lower flange must pass at the go-end of the master block and stop at the no go-end.

4-12. PINCH ROLLER BLOCK ASS'Y AND ELEVATOR CAM REPLACEMENT

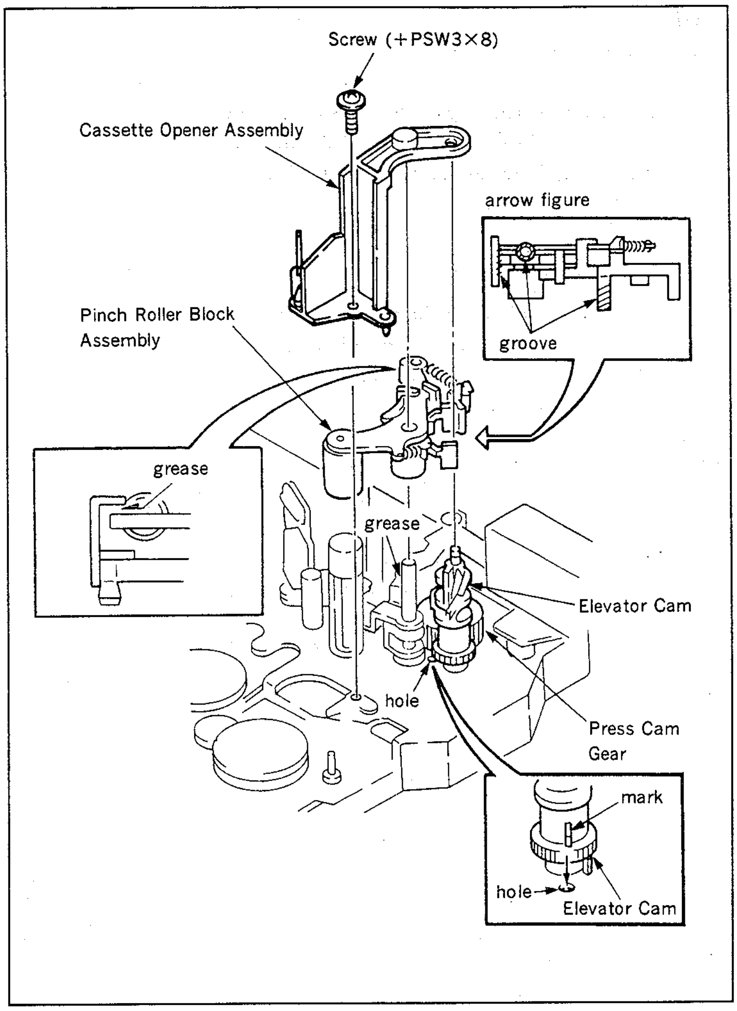
Tool :
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the screw, then remove the cassette opener ass'y.
(2) Pull out the pinch roller block ass'y.
(3) Pull out the elevator cam.

Note on installation

①Align the mark on the elevator cam with the hole in the chassis, then engage the elevator cam with the press cam gear, and install it on the shaft. (As a result, the engagement phases of the elevator cam and press cam gear will coincide.)

②Smear the parts of the pinch roller block ass'y indicated by the arrows (five) with MOLYKOTE grease.


Screw (+PSW3×8)
Cassette Opener Assembly
arrow figure
groove
Pinch Roller Block Assembly
grease
grease
Elevator Cam
hole
Press Cam Gear
mark
hole
Elevator Cam

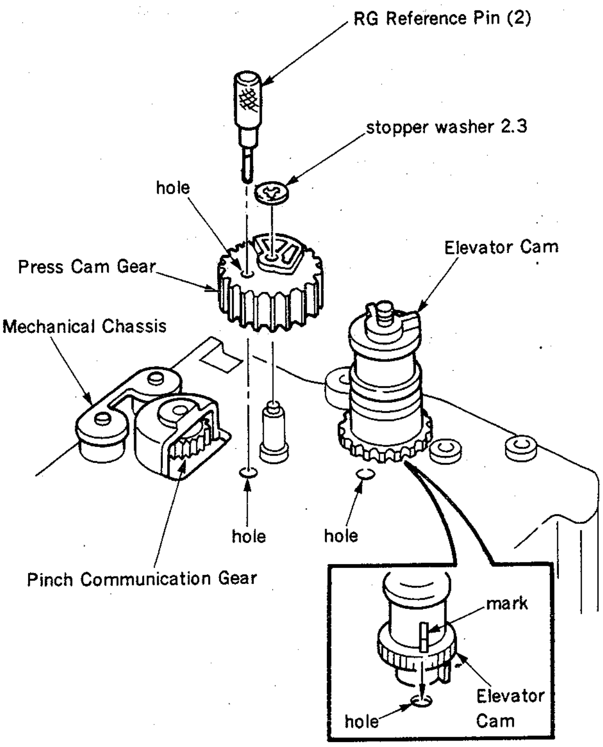
4-13. PRESS CAM GEAR REPLACEMENT

Tool:
RG reference pin (2) (J-6380-050-A)

(1) Remove the pinch roller block ass'y and Pinch solenoid ass'y according to Sec. 4-12 and 4-31.
(2) Remove stop washer 2.3, then remove the press cam gear.

Note on installation

①Pass RG reference pin (2) through the hole in the press cam gear. Next, align it with the hole in the chassis, then engage the press cam gear with the elevator cam and the pinch communication gear, and install it on the shaft.
(By aligning the pin with the holes in the gear, the meshing phases of the press cam gear, elevator cam and pinch communication gear will coincide.)
②The mark on the elevator cam shown in the figure must coincide with the hole in the chassis.


RG Reference Pin (2)
stopper washer 2.3
hole
Elevator Cam
Press Cam Gear
Mechanical Chassis
hole
hole
Pinch Communication Gear
mark
Elevator Cam
hole

4-14. RVS ARM ASS'Y (RVS GUIDE) AND RVS CAM GEAR REPLACEMENT

Tools :
RG reference pin (1) (J-6380-040-A)
Reference plate (J-6380-080-A)
Master block (J-6380-700-A)
Box screwdriver (width 5.5mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)
Sony oil (7-661-018-18)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the E ring, then pull out the RVS arm ass'y. (Fig. 2)
(3) Remove the adjustment nut, then remove the guide base ass'y and the compression coil spring. (Fig. 1)
(4) Remove stop washer 2.3, then pull out the RVS cam gear. (Fig. 2)

Note on installation

①Insert the projection on the guide base ass'y into the hole in the RVS arm, then install the guide base ass'y. (Fig. 1)

②Pass RG reference pin (1) through the hole in the RVS cam gear, then align it with hole B in the chassis, engage the RVS cam gear with the RVS relay gear, then install the gears on the shafts. (Fig. 2). Also, confirm that the hole in the press cam gear coincides with the hole in the chassis. (Refer to Sec. 4-13.)
(By aligning the pin with the holes in the gear, the meshing phases of the drive gears will coincide.)

③Clean the mounting shaft of the RVS arm ass'y with cleaning fluid, then apply 1/2 a drop of Sony oil. (Fig. 2)

④Insert part **a** of the torsion coil spring into hole A in the chassis, then insert part **b** into the bend in the RVS arm ass'y. (Fig. 2)

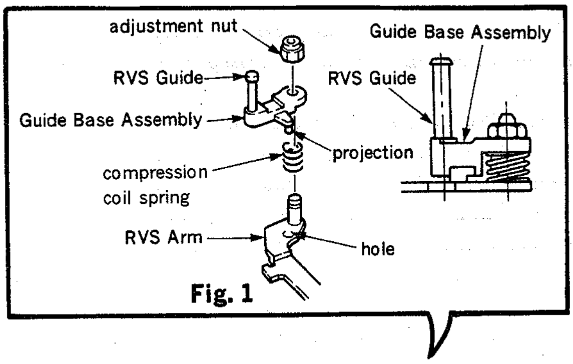

adjustment nut
Guide Base Assembly
RVS Guide
RVS Guide
Guide Base Assembly
projection
compression coil spring
RVS Arm
hole

Fig. 1

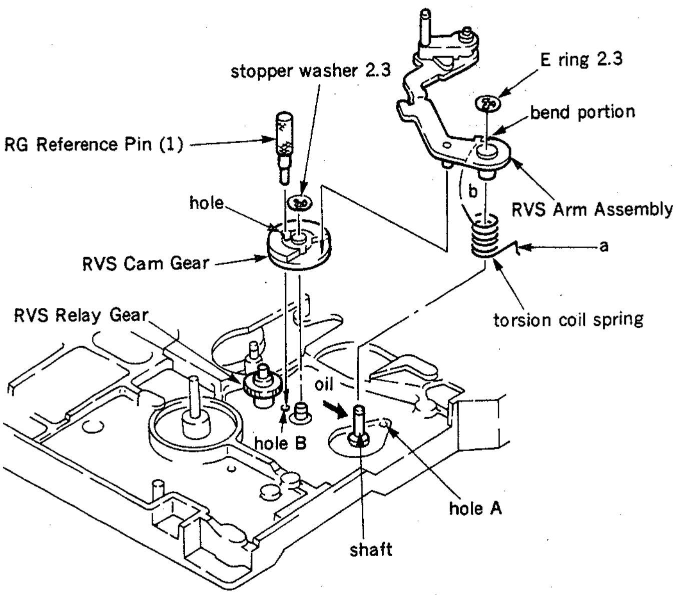

stopper washer 2.3
E ring 2.3
bend portion
RG Reference Pin (1)
hole
b
RVS Arm Assembly
a
RVS Cam Gear
torsion coil spring
RVS Relay Gear
oil
hole B
hole A
shaft

Fig. 2

[Adjustment after replacement]

RVS guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)

(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

(3) Install the reference plate on the chassis. (Fig. 3) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

(5) Set the master block with the stamped L1 face upward, then place it against the RVS guide from the direction shown in the figure. (Fig. 3)

(6) Using a box screwdriver, turn the adjustment nut until the specification is satisfied. (Fig. 4)

(7) Perform tape run adjustment of Sec. 6.

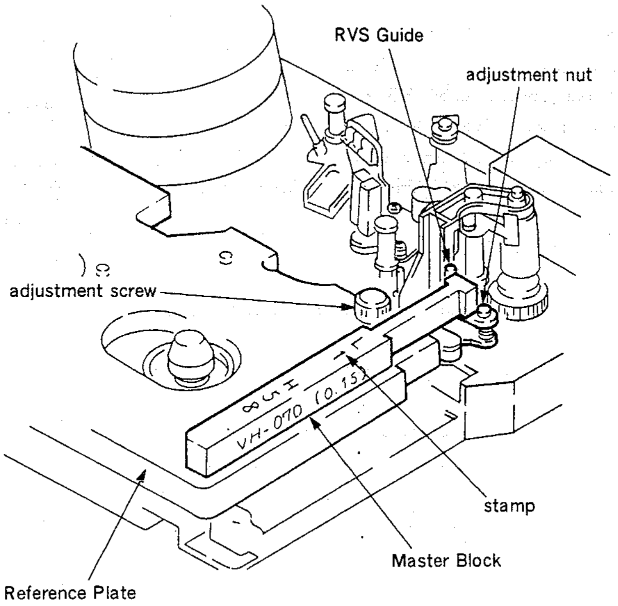

RVS Guide
adjustment nut
adjustment screw
stamp
Master Block
Reference Plate

Fig. 3

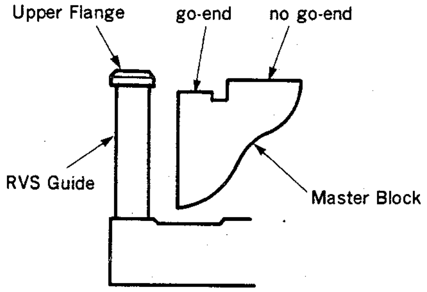

Upper Flange
go-end
no go-end
RVS Guide
Master Block

Fig. 4

Spec.:
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-15. FR DRIVE GEAR AND RVS RELAY GEAR REPLACEMENT

Tools :
RG reference pin (1) (J-6380-040-A)
RG reference pin (2) (J-6380-050-A)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the RVS arm ass'y and the RVS cam gear according to Sec. 4-14.
(3) Remove each of stop washer 2.3, then remove the FR drive gear and the RVS relay gear. (Fig. 1)

Note on installation

Gear installation order

①Install the RVS relay gear on the shaft, taking care that it is facing the right direction. (Fig. 3)

②Pass RG reference pin (2) through the hole in the FR drive gear, then align it with the hole in the mode gear (2), engage the FR drive gear with the RVS relay gear, and install it on the shaft. (Fig. 1)

③Using RG reference pin (1), engage the RVS cam gear with the RVS relay gear, then install it on the shaft according to Sec. 4-14. (Fig. 2)
(By aligning the pin with the holes in the gears, the meshing phases of the drive gears will coincide.)

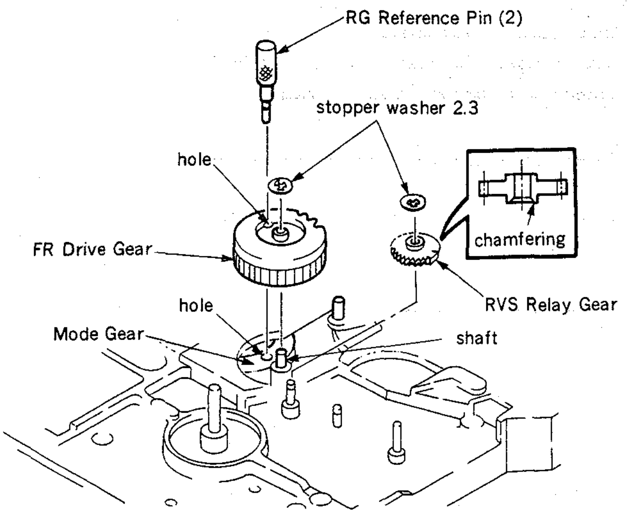

RG Reference Pin (2)
stopper washer 2.3
hole
chamfering
FR Drive Gear
hole
RVS Relay Gear
Mode Gear
shaft

Fig. 1

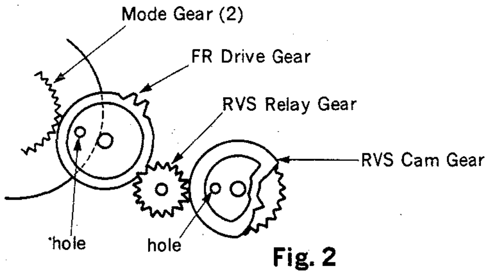

Mode Gear (2)
FR Drive Gear
RVS Relay Gear
RVS Cam Gear
hole
hole

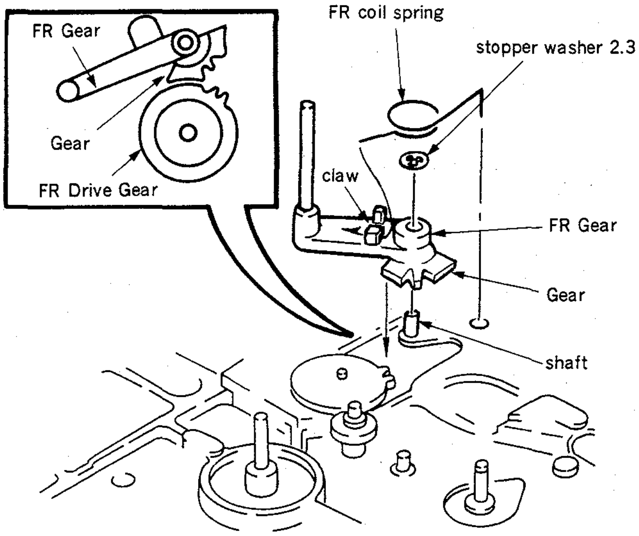
Fig. 2

4-16. FR GEAR REPLACEMENT

(1) Remove the FR coil spring.
(2) Remove stop washer 2.3, then pull out the FR gear.

Note on installation

①Align the gear part of the FR gear with the position shown in Fig. 2.


FR Gear
Gear
FR Drive Gear
FR coil spring
stopper washer 2.3
claw
FR Gear
Gear
shaft

4-17. REEL TABLE ASS'Y REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Reel table height adjustment tool (J-6380-090-A)
Hex wrench screwdriver (width 1.5mm)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the set screw with the hex wrench.
(3) Pull out the reel table ass'y from the reel shaft.

[Reel table height adjustment]

(1) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
(2) Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(3) Clean the top of the reference plate and the adjustment face of the reel table height adjustment tool with cleaning fluid.
(4) Set the reel table height adjustment tool with the stamped side upward, then install it on the reference plate. (Fig. 2)
(5) Perform adjustment so that the height of the S side reel table (or T side reel table) satisfies the specification at position **a**, then rotate the table 90° in the direction of the arrow, and perform adjustment so that the height of the reel table satisfies the specification at position **b**. (Figs. 2 and 3)

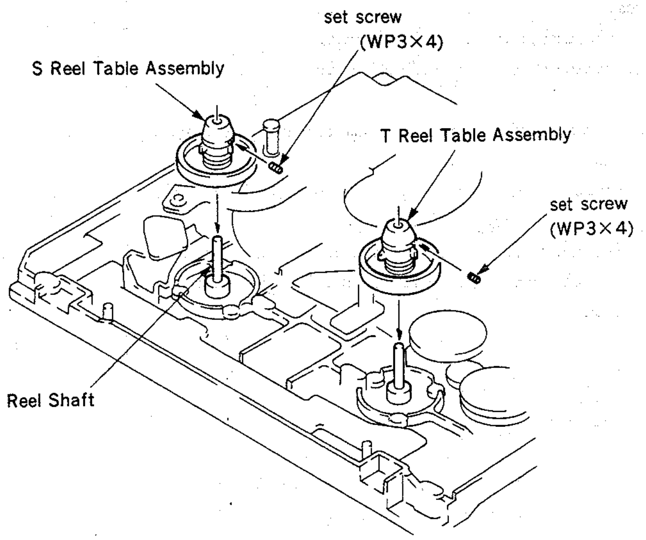

set screw
(WP3×4)
S Reel Table Assembly
T Reel Table Assembly
set screw
(WP3×4)
Reel Shaft

Fig. 1

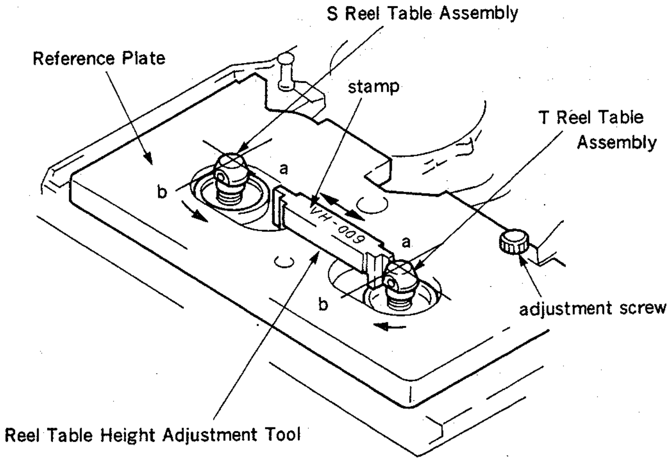

S Reel Table Assembly
Reference Plate
stamp
T Reel Table Assembly
a
b
VH-009
a
b
adjustment screw
Reel Table Height Adjustment Tool

Fig. 2

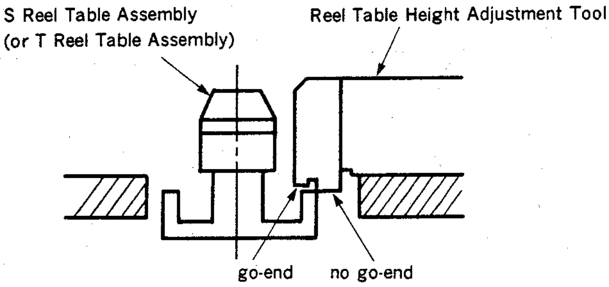

S Reel Table Assembly
(or T Reel Table Assembly)
Reel Table Height Adjustment Tool
go-end
no go-end

Fig. 3

Spec. :
The height of the S side (T side) reel table must pass at the go-end of the reel table height adjustment tool and stop at the no-go end.

4-18. REEL BRAKE ASS'Y REPLACEMENT

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Remove the harness of the LE-80 board from the claw of the reel brake ass'y. (surface of chassis) (Fig. 1)

(3) Disconnect connector CN656W of the solenoid harness from the HN-160 board. (surface of chassis) (Fig. 1)

(4) Remove the two screws, then remove the reel brake ass'y. (back side of chassis) (Fig. 1)

(5) Remove the spring, then the claw of the M clamp, then remove the brake arm (S) ass'y and the brake arm (T) ass'y. (Fig. 2)

(6) Raise part A of the B slider in the direction of arrow B, then remove the claw from the iron core of the solenoid, and pull out the B slider in the direction of arrow C. (Fig. 2)

(7) Remove the two screws and two washers, then remove the solenoid. (Fig. 2)

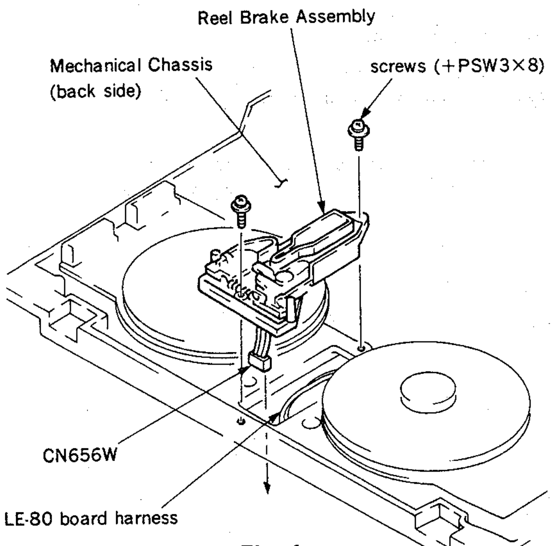

Reel Brake Assembly
Mechanical Chassis
(back side)
screws (+PSW3×8)
CN656W
LE-80 board harness

Fig. 1

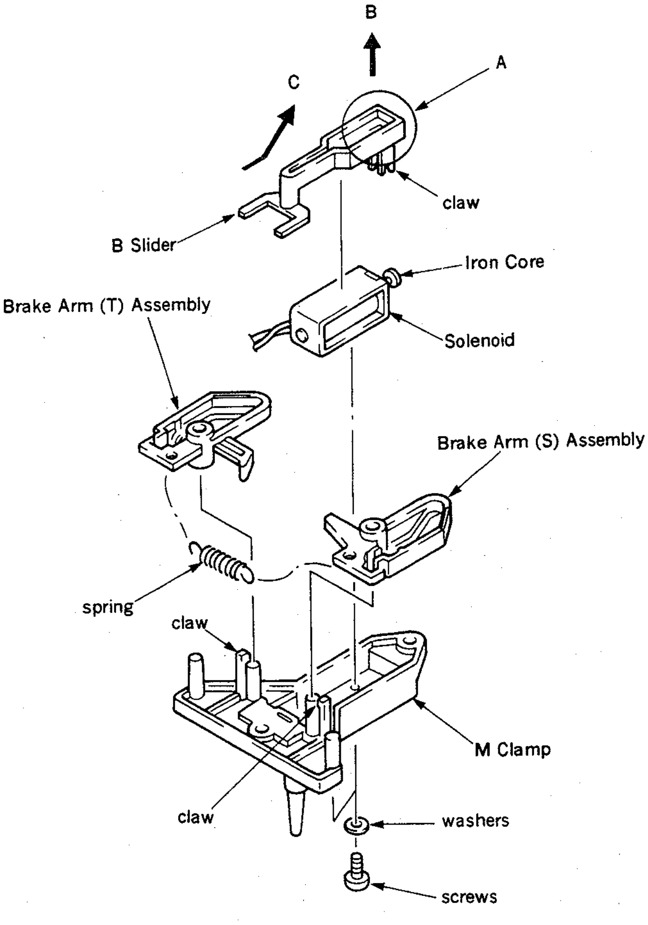

B
A
C
claw
B Slider
Iron Core
Brake Arm (T) Assembly
Solenoid
Brake Arm (S) Assembly
spring
claw
M Clamp
claw
washers
screws

Fig. 2

4-19. REEL MOTOR REPLACEMENT

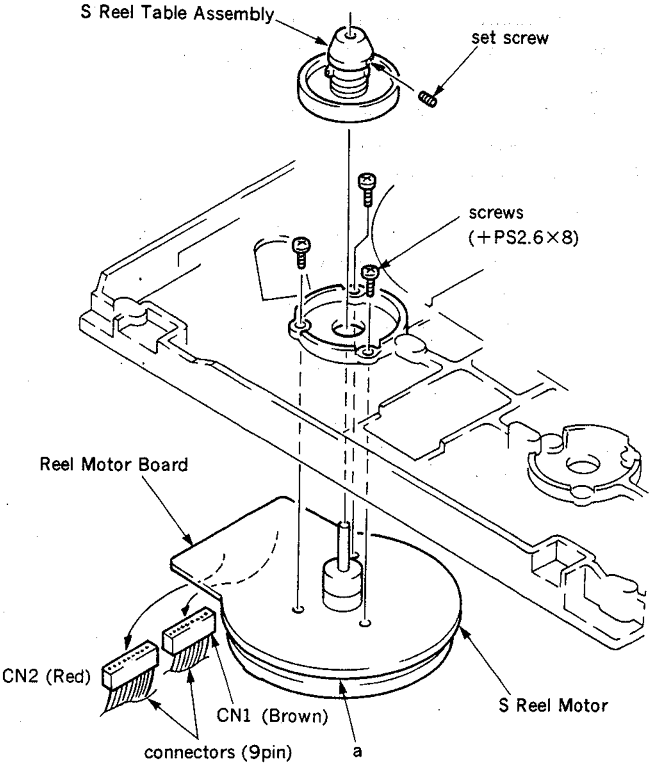
Tools :
Reference plate (J-6380-080-A)
Reel table height adjustment tool (J-6380-090-A)
Hex wrench screwdriver (width 1.5mm)

- The procedure of replacing the reel motor is the same for both the S side and the T side. Here, the procedure of replacing the S side reel motor is described.

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the S side reel table ass'y according to Sec. 4-17.
(3) Disconnect the two 9-pin connectors from the reel motor board.
(4) Remove the three screws, then remove the S side reel motor.

Note : Do not touch the outer periphery (a part) of the reel motor manually.

[Adjustment after installation]
(1) Adjust the height of the S side reel table ass'y according to Sec. 4-17.


S Reel Table Assembly
set screw
screws
(+PS2.6×8)
Reel Motor Board
CN2 (Red)
CN1 (Brown)
S Reel Motor
connectors (9pin)
a

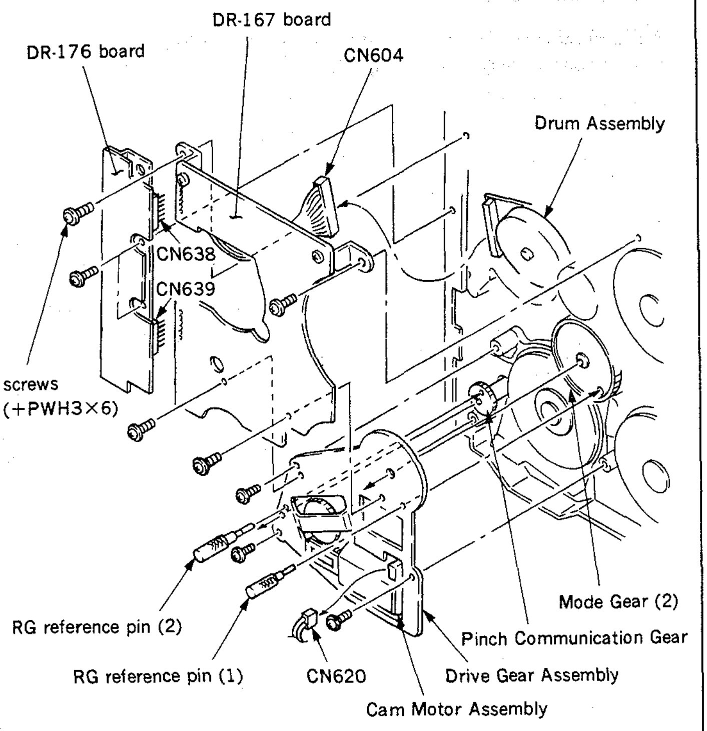
4-20. DRIVE GEAR ASS'Y REPLACEMENT

Tools :
RG reference pin (1) (J-6380-040-A)
RG reference pin (2) (J-6380-050-A)

(1) Remove the LDB brake ass'y from the drive gear ass'y using the procedure in Sec. 4-32.
(2) Remove the two screws, then disconnect the connector pins of CN638 and CN639 from the DR-167 board, and remove the DR-176 board.
(3) Disconnect connector CN604 from the drum ass'y.
(4) Disconnect connector CN620 from the LD-35 board of the cam motor ass'y.
(5) Remove the four screws, then remove the DR-176 board.
(6) Remove the three screws, then remove the drive gear ass'y.
Take care not to rotate the mode gear (2) and the pinch communication gear more than one revolution after removing the drive gear ass'y.

Note on installation

①Pass RG reference pin (1) and RG reference pin (2) through the holes shown in the drawing of the drive gear ass'y, then align the pins with the holes in the mode gear (2) and pinch communication gear, respectively, and install the drive gear ass'y. (By aligning the pins with the holes in the gears, the meshing phases of the drive gear system will coincide.)


DR-167 board
DR-176 board
CN604
Drum Assembly
CN638
CN639
screws
(+PWH3×6)
Mode Gear (2)
Pinch Communication Gear
RG reference pin (2)
RG reference pin (1)
CN620
Drive Gear Assembly
Cam Motor Assembly

4-20-1. Cam motor ass'y replacement

(1) Remove the screw, then remove the cam motor ass'y. (Fig. 1)

Note on installation

①Align the groove of the cam motor ass'y with part **a** of the drive gear ass'y. (Fig. 1)

②Align the hole in the cam motor ass'y with the projection on the drive gear ass'y. (Fig. 1)

③Set the cam motor parallel to the **b** face of the drive gear ass'y, then screw it fixed. (Fig. 2)

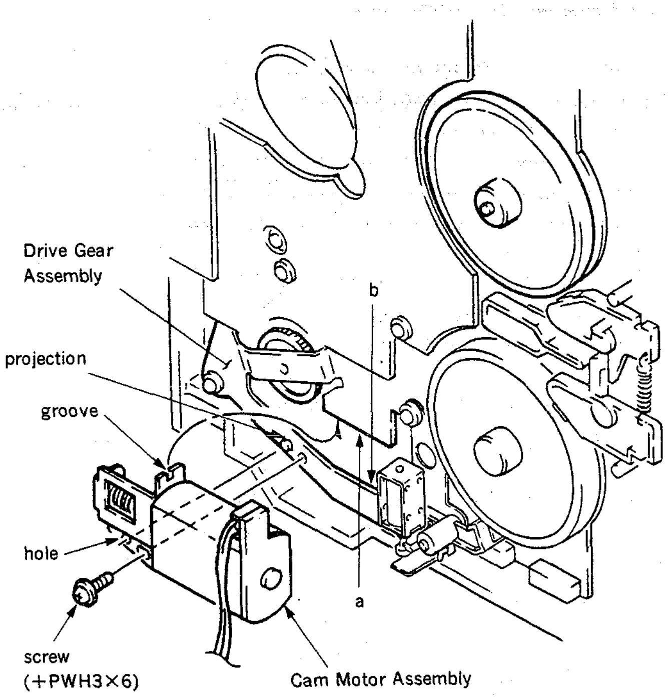

Drive Gear Assembly
b
projection
groove
hole
a
screw (+PWH3×6)
Cam Motor Assembly

Fig. 1

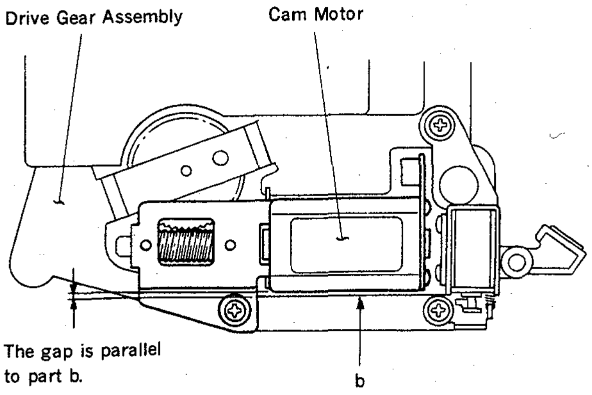

Drive Gear Assembly
Cam Motor
The gap is parallel to part b.
b

Fig. 2

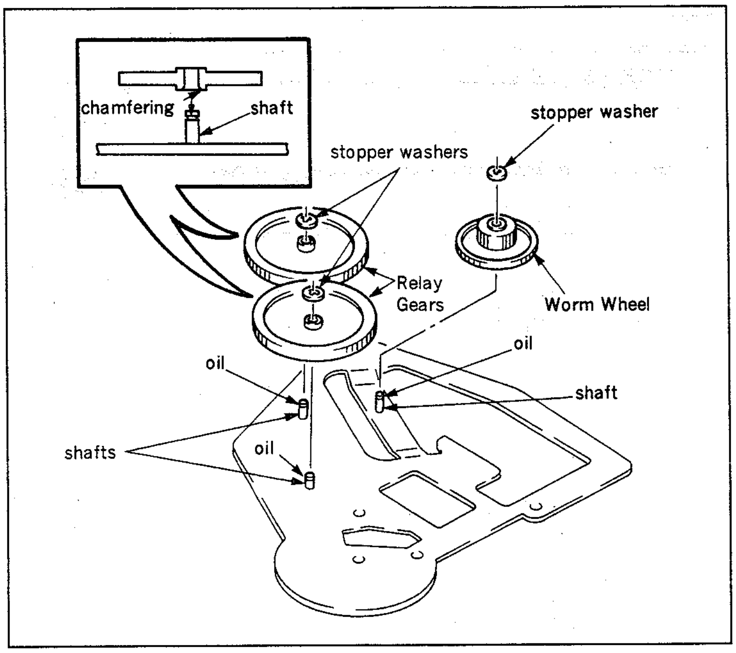
4-20-2. Relay gear and worm wheel replacement

Tool :
Sony oil (7-661-018-18)

(1) Remove the stop washer, then remove the relay gear and the worm wheel.

Note on installation

①Clean the shafts with cleaning fluid, then apply 1/2 a drop of Sony oil.


chamfering
shaft
stopper washers
stopper washer
Relay Gears
Worm Wheel
oil
shaft
oil
shafts
oil

4-21. MODE GEAR (2) ASS'Y REPLACEMENT

Tool :
RG reference pin (2) (J-6380-050-A)

(1) Remove the drive gear ass'y according to Sec. 4-20.
(2) Remove the stop washer, then remove the mode gear (2) ass'y from the shaft. (Fig. 1)

Note on installation

①Push the loading gear (right) in the direction of arrow A. Pass RG reference pin (2) through the hole in the mode gear (2) ass'y, then align it with the ※ mark on the chassis, then engage the mode gear ass'y with the FR drive gear, and install it. (Figs. 1 and 2)
(By aligning the pin with the holes in the gears, the meshing phases of the mode gear ass'y and the FR drive gear will coincide.)
②Align the meshing phases of the gears, and install the drive gear ass'y according to Sec. 4-20.

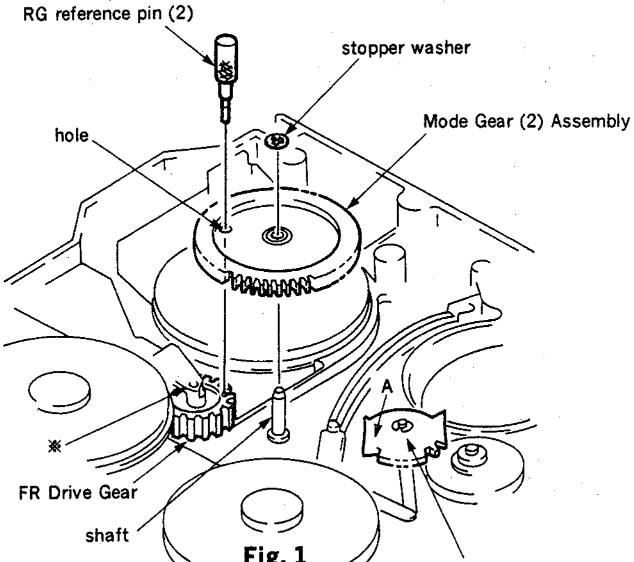

RG reference pin (2)
stopper washer
Mode Gear (2) Assembly
hole
A
※
FR Drive Gear
shaft
Loading Gear (Right)

Fig. 1

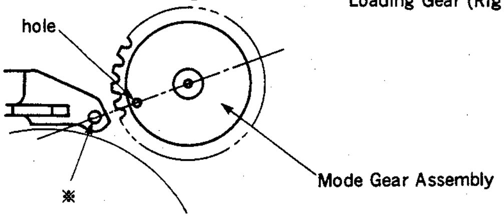

hole
Mode Gear Assembly
※

Fig. 2

4-22. LOADING GEAR (RIGHT) ASS'Y REPLACEMENT

Tool :
MOLYKOTE grease EM-30LG (J-6090-014-A)
or MOLYKOTE grease EM-30L : DOW CORNING Corp.

(1) Remove the drive gear ass'y according to Sec. 4-20.
(2) Remove the mode gear (2) ass'y according to Sec. 4-21.
(3) Rotate the gear part of the loading gear (right) manually in the direction of the arrow to the position shown in Fig. 1.
(4) Remove the two E rings, then remove the loading gear (right) ass'y. (Fig. 2)

Note : Take care not to deform the arm of the loading gear (right) ass'y.

Note on installation

①Align the mark on the loading gear (left) with the center point between two teeth on the loading gear (right), then install the chassis shaft and the shaft of the shuttle (right). (Fig. 3)
②Smear a small amount of grease to the part of the loading gear (right) ass'y indicated in the figure. (Fig. 2)
③Align the engagement phases of the mode gear (2) ass'y and the drive gear ass'y ,then install the gear ass'ys, according to Sec. 4-21 and 4-20.

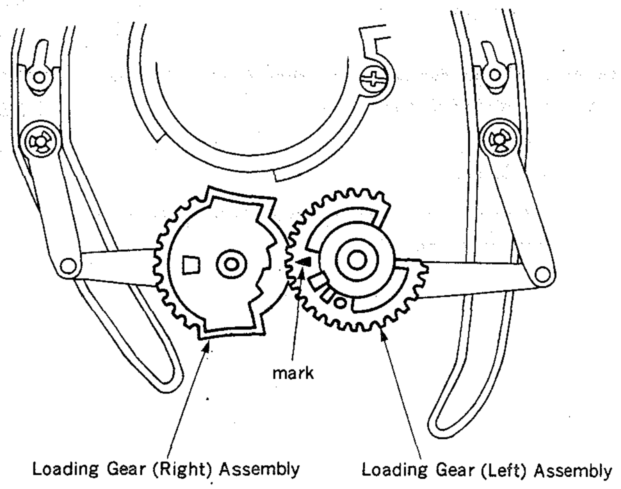

mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 1

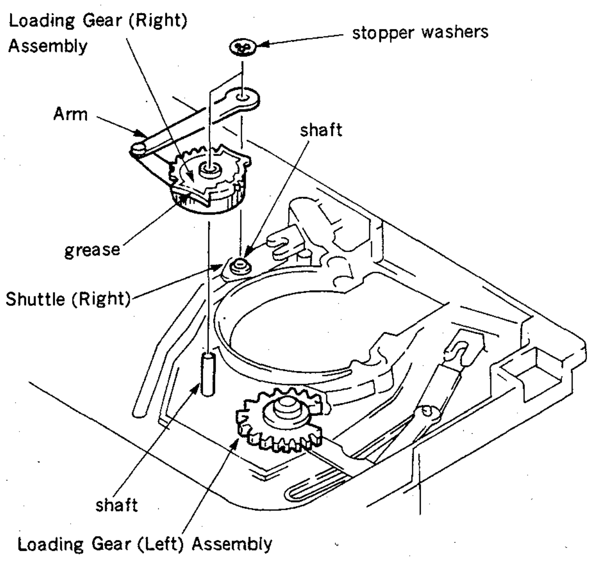

Loading Gear (Right) Assembly
stopper washers
Arm
shaft
grease
Shuttle (Right)
shaft
Loading Gear (Left) Assembly

Fig. 2

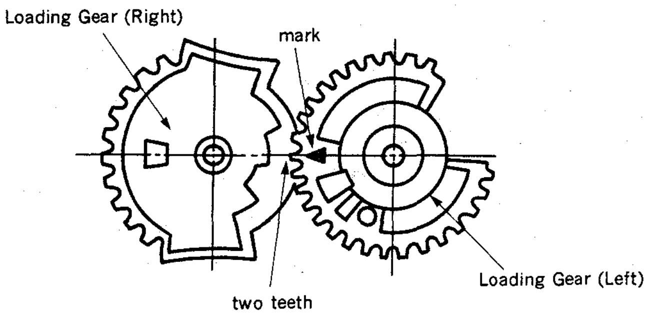

Loading Gear (Right)
mark
Loading Gear (Left)
two teeth

Fig. 3

4-23. LOADING GEAR (LEFT) ASS'Y REPLACEMENT

(1) Remove the cam motor ass'y according to Sec. 4-20-1. (Fig. 1)

(2) Rotate the worm wheel of the drive gear clockwise manually until the loading gear (left) ass'y moves to the position shown in Fig. 2. (Figs. 1 and 2)

(3) Remove the two stop washers, then remove the loading gear (left) ass'y. (Fig. 3)

Note: Take care not to deform the arm of the loading gear (left) ass'y.

Note on installation

①Align the mark on the loading gear (left) with the center point between two teeth of the loading gear (right), then install the gears on the shaft of the chassis and the shaft of the shuttle (left). (Fig. 4)

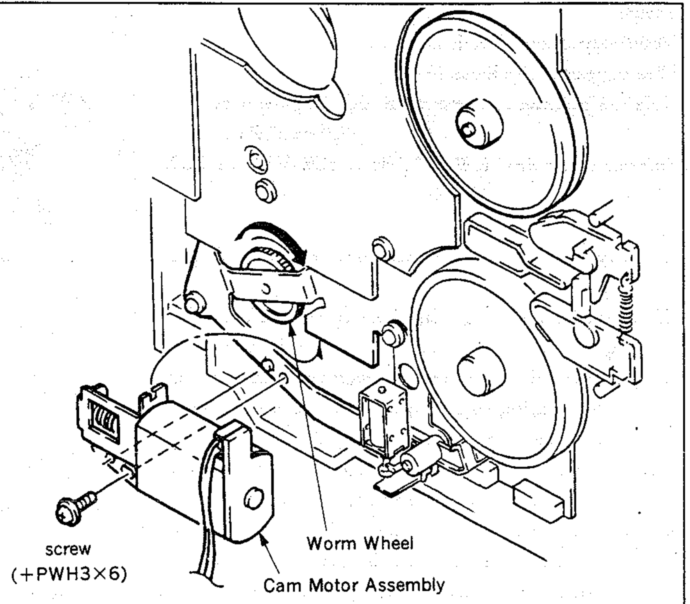

screw
(+PWH3×6)
Worm Wheel
Cam Motor Assembly

Fig. 1

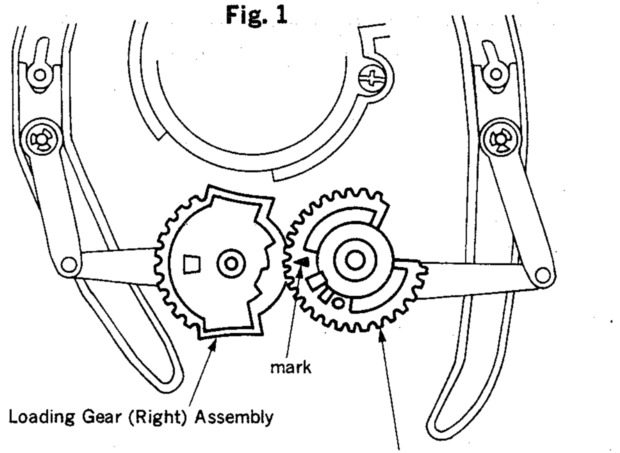

mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 2

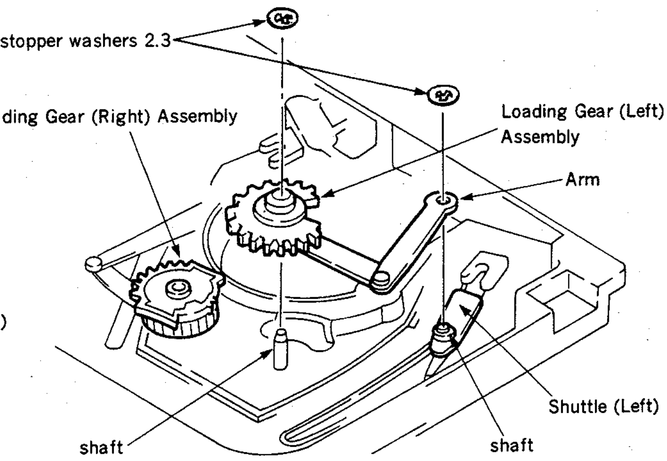

stopper washers 2.3
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly
Arm
Shuttle (Left)
shaft
shaft

Fig. 3

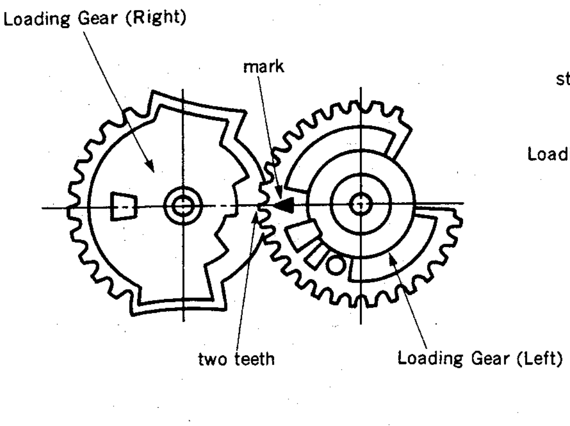

Loading Gear (Right)
mark
two teeth
Loading Gear (Left)

Fig. 4

4-24. SHUTTLE (RIGHT) ASS'Y REPLACEMENT

Tools :
Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Refer to Sec. 4-23, then move the loading gear (right) ass'y to the position shown in Fig. 1.
(3) Remove the stop washer, then remove the arm of the loading gear (right) ass'y from the shaft of the shuttle plate ass'y. (Fig. 2)

Note : Take care not to deform the arm of the loading gear (right) ass'y.

(4) Remove the screw, then remove the shuttle (right) ass'y and the shuttle plate ass'y. (Fig. 3)

Note : Move the shuttle (right) ass'y in the unthreading end direction to ensure that it does not strike the drum ass'y, then remove it.

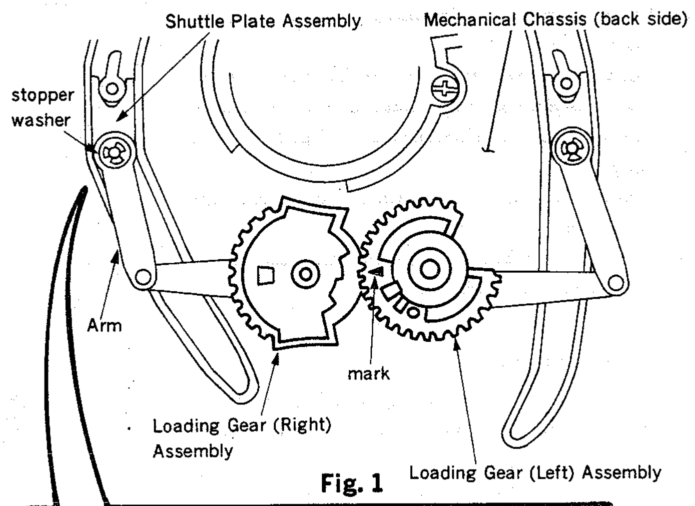

Shuttle Plate Assembly
Mechanical Chassis (back side)
stopper washer
Arm
mark
Loading Gear (Right) Assembly
Loading Gear (Left) Assembly

Fig. 1

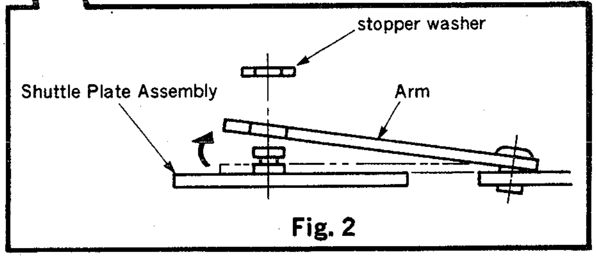

stopper washer
Shuttle Plate Assembly
Arm

Fig. 2

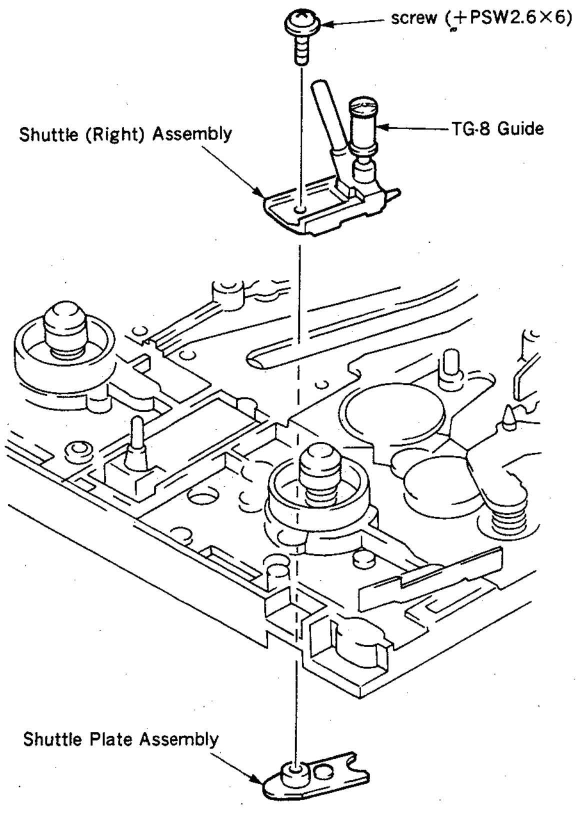

screw (+PSW2.6×6)
TG-8 Guide
Shuttle (Right) Assembly
Shuttle Plate Assembly

Fig. 3

Note on installation

①Put the screw as shown in Fig. 4 when installing the shattle (right) ass'y to the shattle plate ass'y.

[**Adjustment after replacement**]

TG-8 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (Refer to Sec. 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 5) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) Set the master block with the H10 stamped mark upward, then place it against the TG-8 guide from the direction shown in the figure. (Fig. 5)
(6) Using the guide adjustment screwdriver, turn the upper flange on the guide until the specification is satisfied. (Fig. 6)
(7) Perform tape run adjustment of Sec. 6.

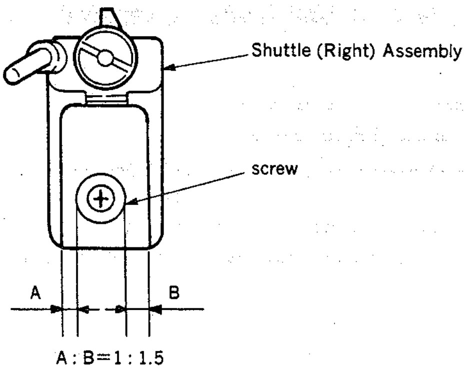

Shuttle (Right) Assembly
screw
A
B
A : B=1 : 1.5

Fig. 4

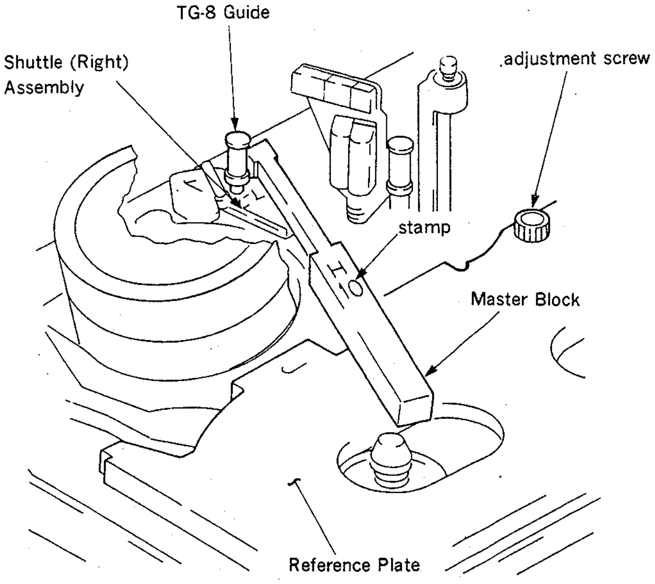

TG-8 Guide
Shuttle (Right) Assembly
adjustment screw
stamp
Master Block
Reference Plate

Fig. 5

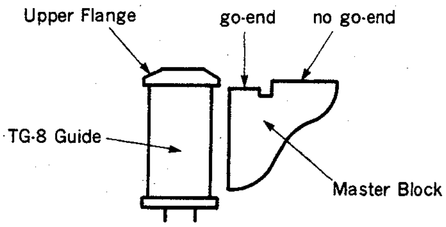

Upper Flange
go-end
no go-end
TG-8 Guide
Master Block

Fig. 6

Spec. :
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-25. TG-8 GUIDE REPLACEMENT

Tools :
Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw with a hex wrench. (Fig. 1)
(3) Rotate the TG-8 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

Note on installation

①Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
②Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
③Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
④Set the master block with the H10 stamped mark upward, then place it against the TG-8 guide from the direction shown in the figure, and tighten the set screw until the upper flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Tightening torque of set screw : 78×10^{-3} to 98×10^{-3} N·m (0.8 to 1 kg·cm))

[Adjustment after replacement]
(1) Perform TG-8 guide height adjustment according to Sec. 4-24.
(2) Perform tape run adjustment of Sec. 6.

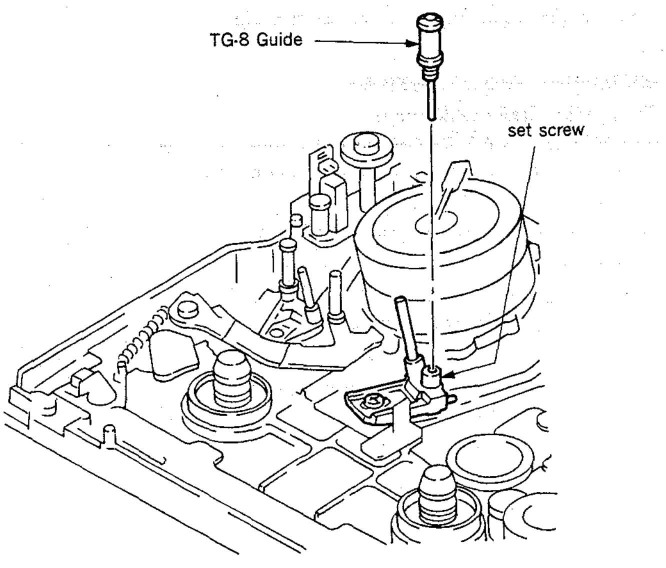


Fig. 1

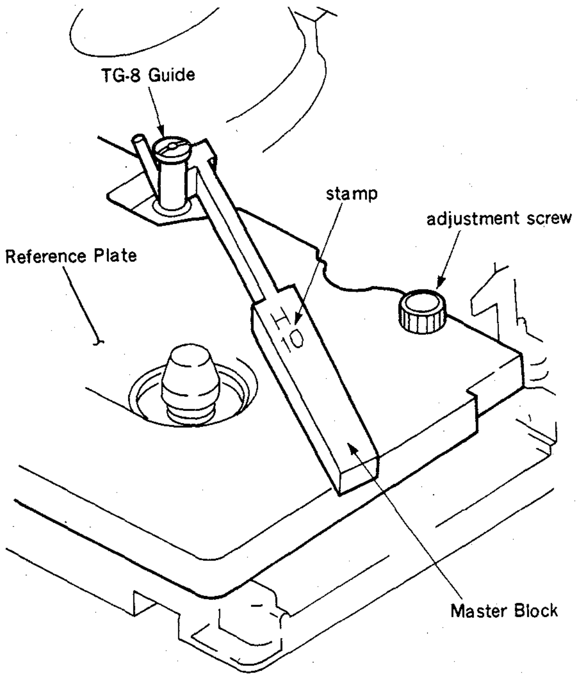


Fig. 2

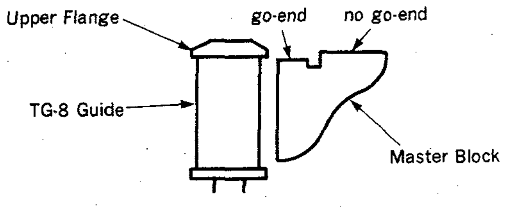


Fig. 3

4-26. SHUTTLE (LEFT) ASS'Y REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J-6380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Remote controller : (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Remove the stop washer, then remove the arm of the loading gear (left) ass'y from the shaft of the shuttle plate ass'y. (Fig. 1)

Note: Take care not to deform the arm of the loading gear (left) ass'y.

(3) Remove the screw, then remove the shuttle (left) ass'y and the shuttle plate ass'y. (Fig. 2)

Note on installation

①The tension regulator ass'y and shuttle (left) ass'y must be in the position shown in Fig. 3.

②Put the screw as shown in Fig. 4 when installing the shattle (left) ass'y to the shattle plate ass'y.

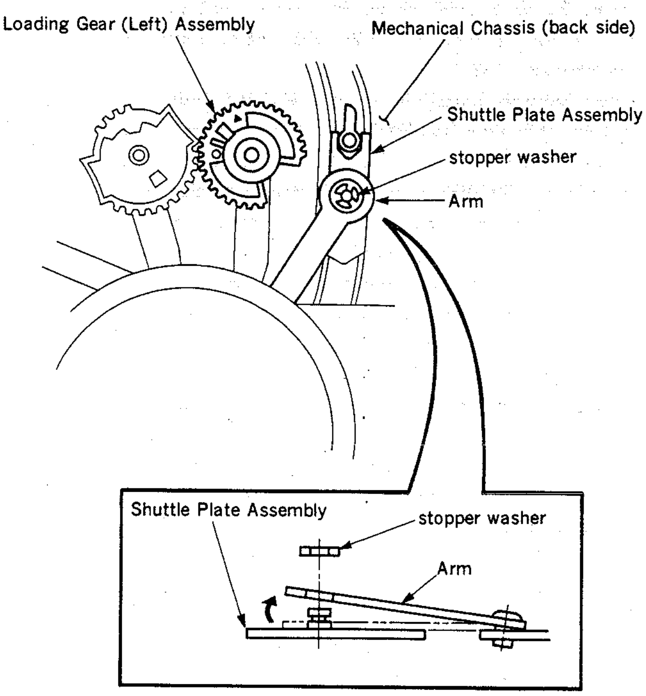

Loading Gear (Left) Assembly
Mechanical Chassis (back side)
Shuttle Plate Assembly
stopper washer
Arm
Shuttle Plate Assembly
stopper washer
Arm

Fig. 1

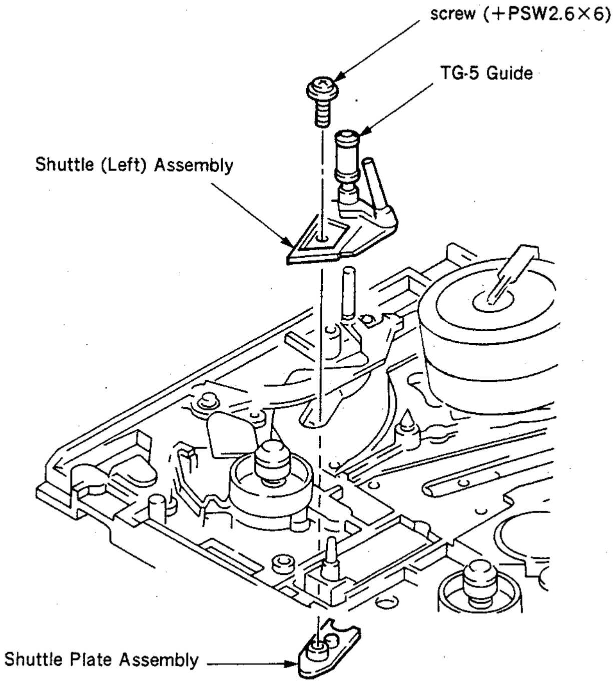

screw (+PSW2.6×6)
TG-5 Guide
Shuttle (Left) Assembly
Shuttle Plate Assembly

Fig. 2

[Adjustment after replacement]

TG-5 guide height adjustment

(1) Press the PLAY button on the remote controller for the threading completion mode. (See sub-section 4-1-3.)
(2) Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.
(3) Install the reference plate on the chassis. (Fig. 5) (If the reference plate moves about when the top of the plate is touched gently with the fingers at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)
(4) Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.
(5) While moving the stabilizer in the direction of the arrow, set the master block with the H10 stamped mark upward, then place it against the TG-5 guide from the direction shown in the figure. (Fig. 5)
(6) Using the guide adjustment screwdriver, turn the upper flange on the guide until the specification is satisfied. (Fig. 6)
(7) Perform tape run adjustment of Sec. 6.

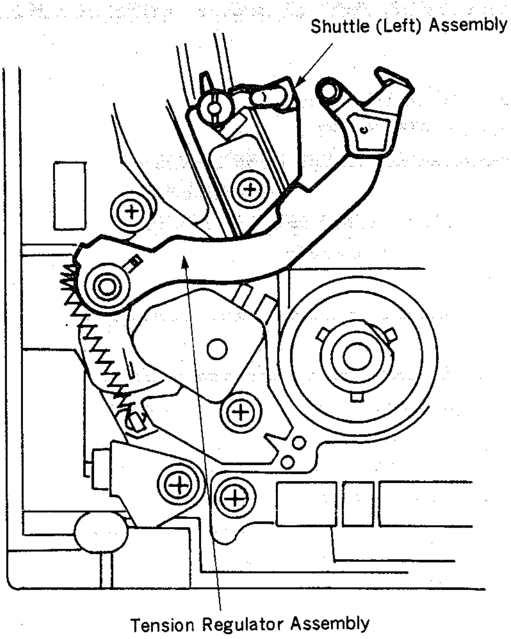

Shuttle (Left) Assembly
Tension Regulator Assembly

Fig. 3

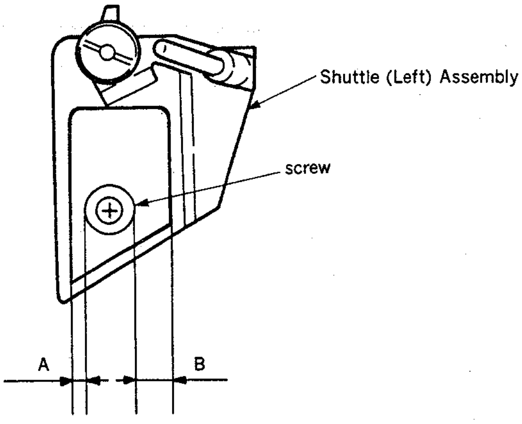

Shuttle (Left) Assembly
screw
A
B
A : B=1 : 3

Fig. 4

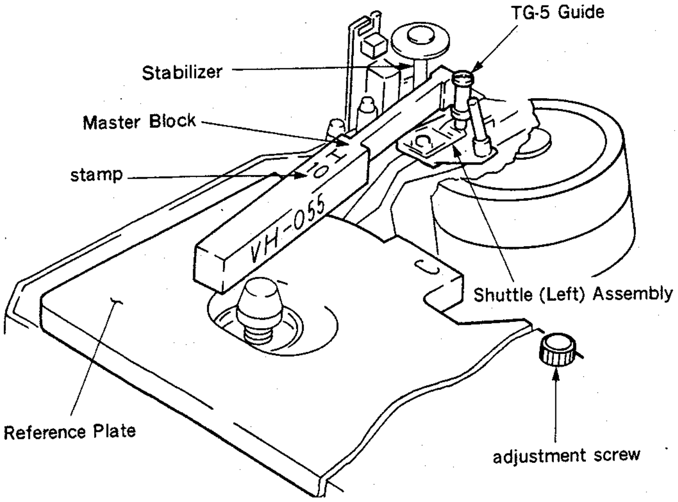

TG-5 Guide
Stabilizer
Master Block
stamp
H10
VH-055
Shuttle (Left) Assembly
Reference Plate
adjustment screw

Fig. 5

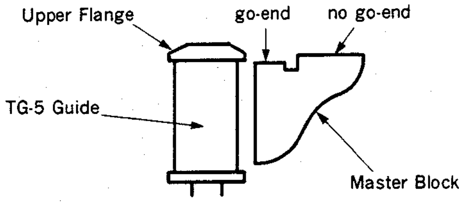

Upper Flange
go-end
no go-end
TG-5 Guide
Master Block

Fig. 6

Spec.:
The height of the upper flange must pass at the go-end of the master block and stop at the no go-end.

4-27. TG-5 GUIDE REPLACEMENT

Tools :

Reference plate (J-6380-080-A)
Master block (J06380-550-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Hex wrench screwdriver (width 0.89mm)
Remote controller (SVRM-100 or RM-V100 or RM-V200)

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Loosen the set screw with a hex wrench. (Fig. 1)
(3) Rotate the TG-5 guide counterclockwise with the guide adjustment screwdriver, and remove it. (Fig. 1)

Note on installation

①Clean the mounting face of the reference plate and the four mounting faces on the chassis with cleaning fluid.

②Install the reference plate on the chassis. (Fig. 2) (If the reference plate moves about when the top of the plate is touched gently manually at a point near where it is installed on the chassis, turn the adjustment screw until the plate no longer moves about.)

③Clean the top of the reference plate and the adjustment face of the master block with cleaning fluid.

④Set the master block with the H10 stamped mark upward, then place it against the TG-5 guide from the direction shown in the figure, and tighten the set screw untile the upper flange is roughly the same height as the go-end of the master block. (Figs. 2 and 3)
(Tightening torque of set screw : 78×10^{-3} to 98×10^{-3} N•m (0.8 to 1 kg•cm))

[Adjustment after replacement]

(1) Perform TG-5 guide height adjustment according to Sec. 4-26.
(2) Perform tape run adjustment of Sec. 6.

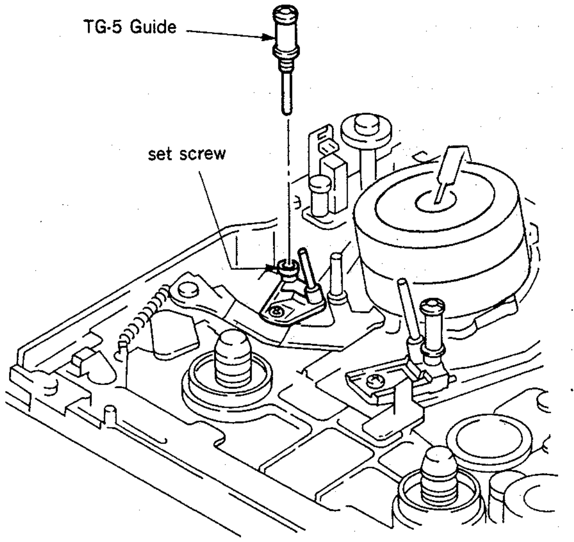


Fig. 1

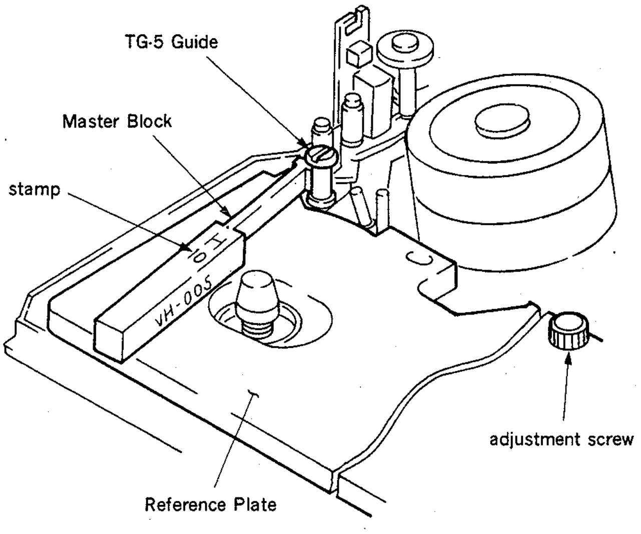


Fig. 2

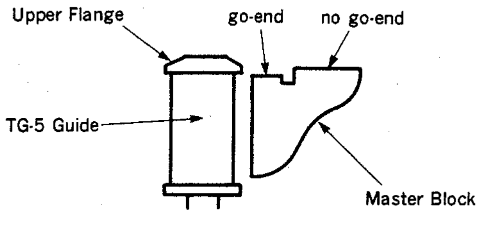


Fig. 3

4-28. SLIDE RAIL (R) REPLACEMENT

(1) Remove the cassette compartment according to Sec. 4-2.

(2) Remove the BC roller ass'y according to Sec. 4-3.

(3) Remove the shuttle (right) ass'y according to Sec. 4-24.

(4) Remove the screw, then remove the LE-80 board. (Fig. 1)

(5) Remove the two screws, then remove the shuttle holder in the direction of arrow A. (Fig. 1)

(6) Remove claws **a**, **b** and **c** and also the two parts with the square hole on slide rail (R) from the chassis, then remove the slide rail (R). (Fig. 1)

Note on installation

①While moving the stabilizer in the direction of arrow B, fit claw **a** into the chassis, then insert projection **a** into the hole in the chassis. (Fig. 1)

②Next, align projections **b** and **c** with the holes in the chassis, then insert claws **b** and **c** and also the two parts with the square holes into the chassis. (Figs. 2 and 3)

[Adjustment after replacement]

(1) Perform tape run adjustment of Sec. 6.

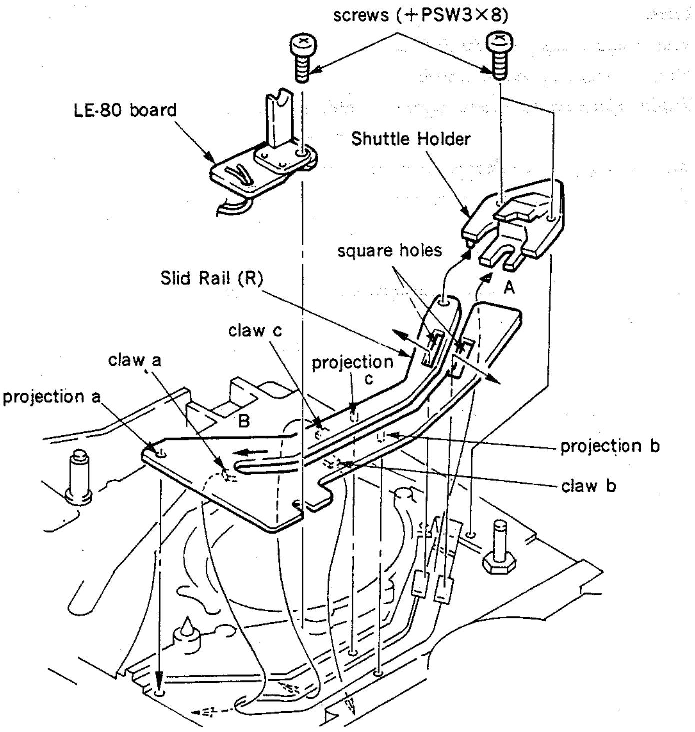

screws (+PSW3×8)
LE-80 board
Shuttle Holder
square holes
A
Slid Rail (R)
claw c
claw a
projection c
projection a
B
projection b
claw b

Fig. 1

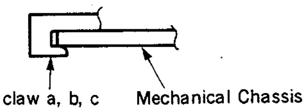

claw a, b, c
Mechanical Chassis

Fig. 2

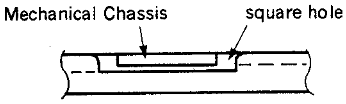

Mechanical Chassis
square hole

Fig. 3

4-29. SLIDE RAIL (L) REPLACEMENT

(1) Remove the cassette compartment according to Sec. 4-2.
(2) Remove the tension regulator ass'y and the STD ass'y according to Sec. 4-7.
(3) Remove the tape stabilizer ass'y according to Sec. 4-9.
(4) Remove the shuttle (left) ass'y according to Sec. 4-26.
(5) Remove the two screws, then remove the shuttle holder in the direction of arrow A. (Fig. 1)
(6) Remove claws **a**, **b** and **c** and the two parts with the square hole on slide rail (L) from the chassis, then remove the slide rail (L). (Fig. 1)

Note on installation

①While moving the slide rail in the direction of arrow B, fit claw **a** into the chassis, then insert projection **a** into the hole in the chassis. (Fig. 1)
②Next, align projections **b** and **c** with the holes in the chassis, then insert claws **b** and **c** and also the two parts with the square hole into the chassis. (Figs. 2 and 3)

[**Adjustment after replacement**]
(1) Adjust the height of the TG-3 guide once again according to Sec. 4-9.
(2) Adjust the position of the tension regulator once again according to Sec. 4-7.
(3) Adjust the tape tension once again according to Sec. 6-2.
(4) Perform tape run adjustment of Sec. 6.

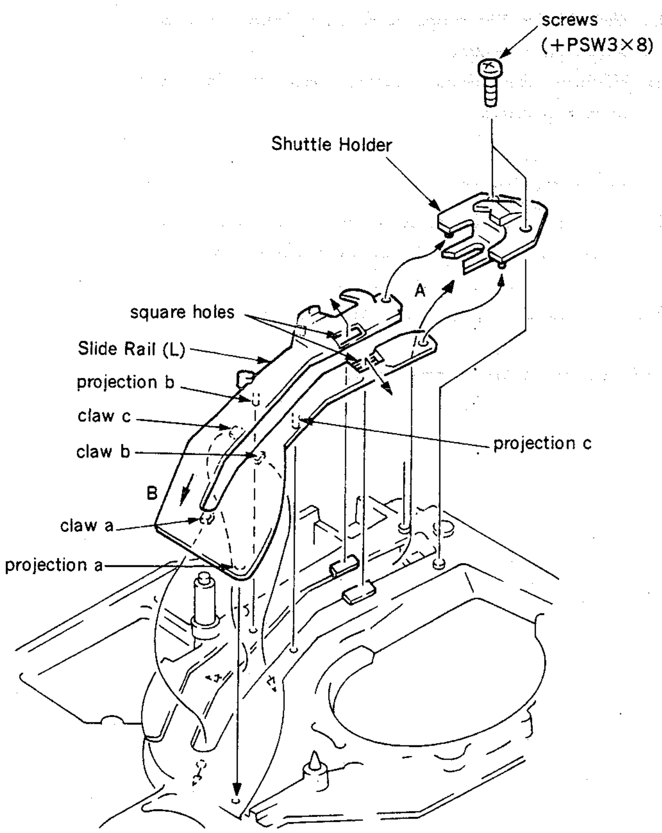

screws
(+PSW3×8)
Shuttle Holder
A
square holes
Slide Rail (L)
projection b
claw c
projection c
claw b
B
claw a
projection a

Fig. 1

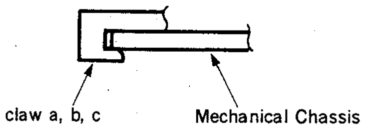

claw a, b, c
Mechanical Chassis

Fig. 2

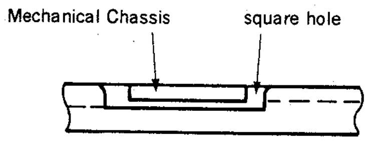

Mechanical Chassis
square hole

Fig. 3

4-30. CAPSTAN MOTOR REPLACEMENT

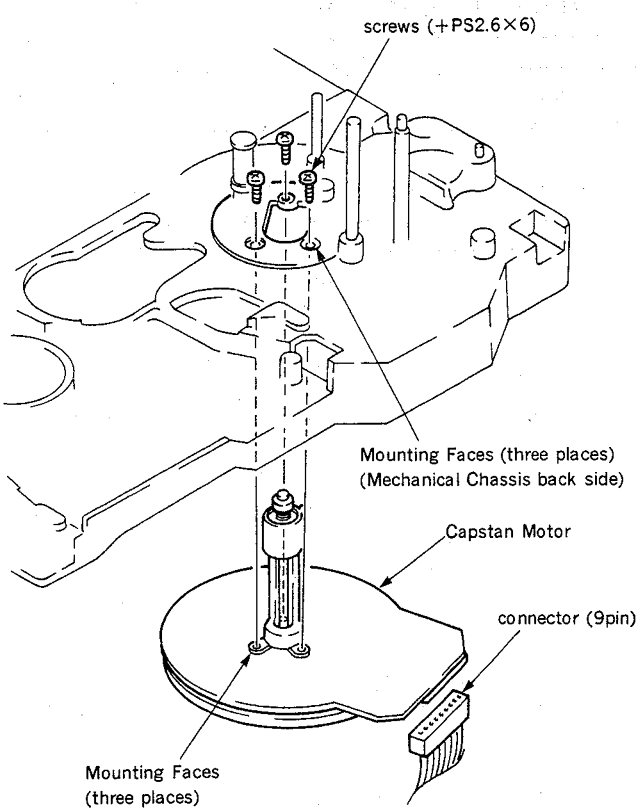
(1) Remove the drive gear ass'y according to Sec. 4-20.
(2) Disconnect the 9-pin connector from the capstan motor board.
(3) Remove the three screws, then remove the capstan motor.

Note on installation

①Clean the three mounting faces at the back of the chassis and the three mounting faces of the capstan motor with cleaning fluid.
②Take care not to damage the capstan shaft.

[Adjustment after replacement]

(1) Perform tape run adjustment of Sec. 6.


screws (+PS2.6×6)
Mounting Faces (three places)
(Mechanical Chassis back side)
Capstan Motor
connector (9pin)
Mounting Faces
(three places)

4-31. PINCH SOLENOID ASS'Y REPLACEMENT

(1) Disconnect connector CN118 from the SS-49 board, then remove the harness from the wiring clamp. (Fig. 1)

(2) Pull out the pinch roller block ass'y using the procedure in Sec. 4-12.

(3) Remove the screw, then remove the retainer and the poly-slider-washer. (Fig. 2)

(4) Remove the two screws, then raise the pinch solenoid ass'y and remove it. (Fig. 2)

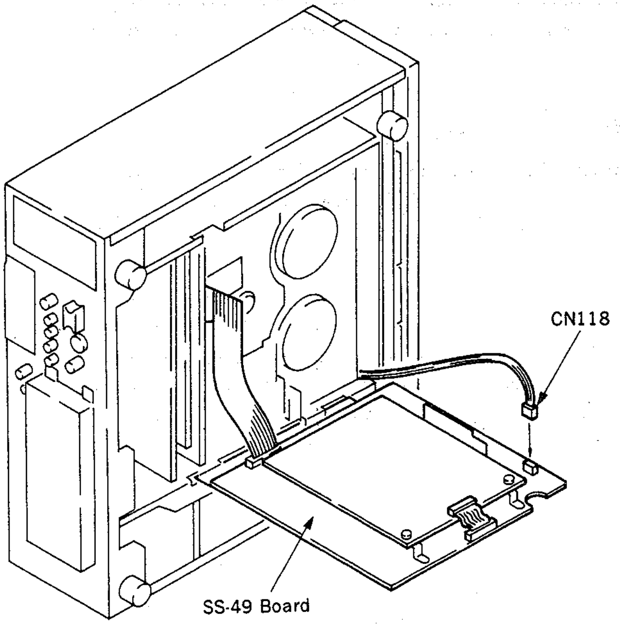

CN118
SS-49 Board

Fig. 1

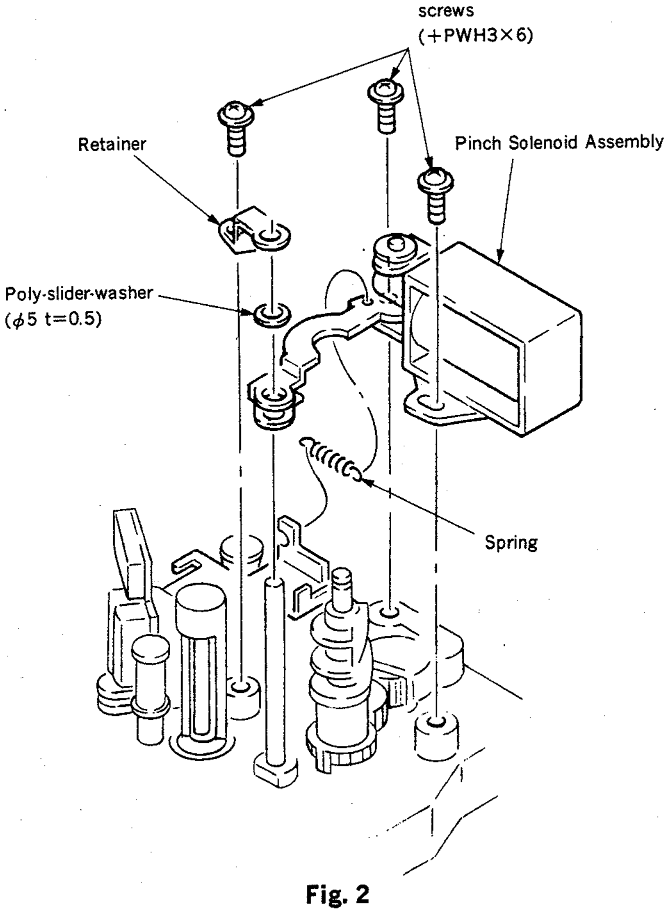

screws
(+PWH3×6)
Retainer
Pinch Solenoid Assembly
Poly-slider-washer
(ϕ5 t=0.5)
Spring

Fig. 2

(5) Remove the two screws, then remove the solenoid from the solenoid base. (Fig. 3)

(6) Remove the stopper washer, then remove the solenoid pin and the pressure lever from the iron core. (Fig. 3)

Note on installation

①Align the longitudinal hole of the pinch solenoid ass'y with the boss of the mechanical chassis, then screw in the fixing screws but do not tighten them hard. (Fig. 4)

②Insert a flat blade screwdriver at the point indicated by A in the drawing, then turn it clockwise so that the pinch solenoid ass'y moves in the direction of the arrow as far as it will go, and tighten the two screws hard. (Fig. 4)

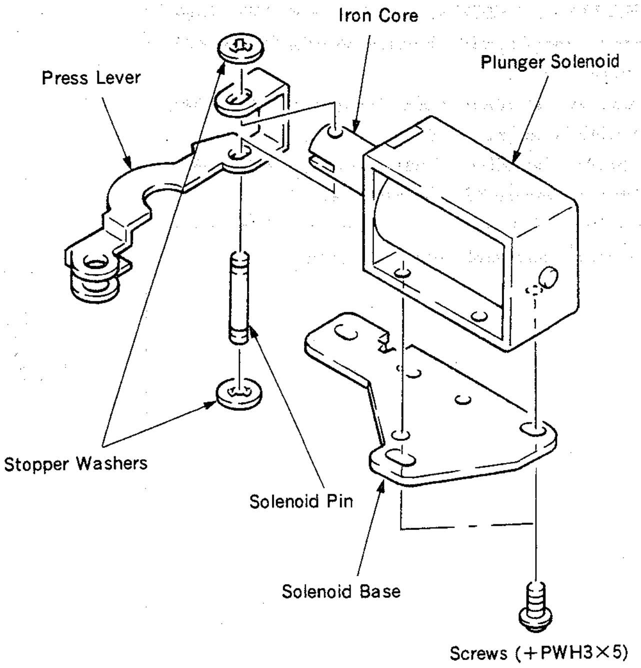

Iron Core
Plunger Solenoid
Press Lever
Stopper Washers
Solenoid Pin
Solenoid Base
Screws (+PWH3×5)

Fig. 3

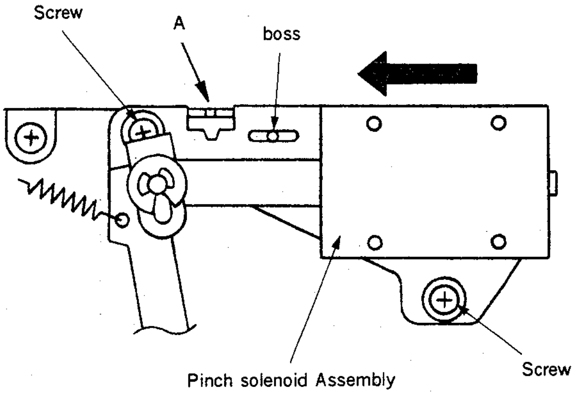

Screw
A
boss
Pinch solenoid Assembly
Screw

Fig. 4

4-32. LDB BRAKE ASS'Y REPLACEMENT

Tool :

MOLYKOTE grease EM-30LG (J-6090-014-A)

(1) Disconnect connector CN633 from the DR-167 board.

(2) Remove the two screws and the wiring clamp, then remove the LDB brake ass'y.

(3) Remove the two screws and the two washers, then remove the plunger solenoid from the LDB base ass'y.

(4) Remove the spring, then pull out the LDB arm ass'y from the LDB base ass'y.

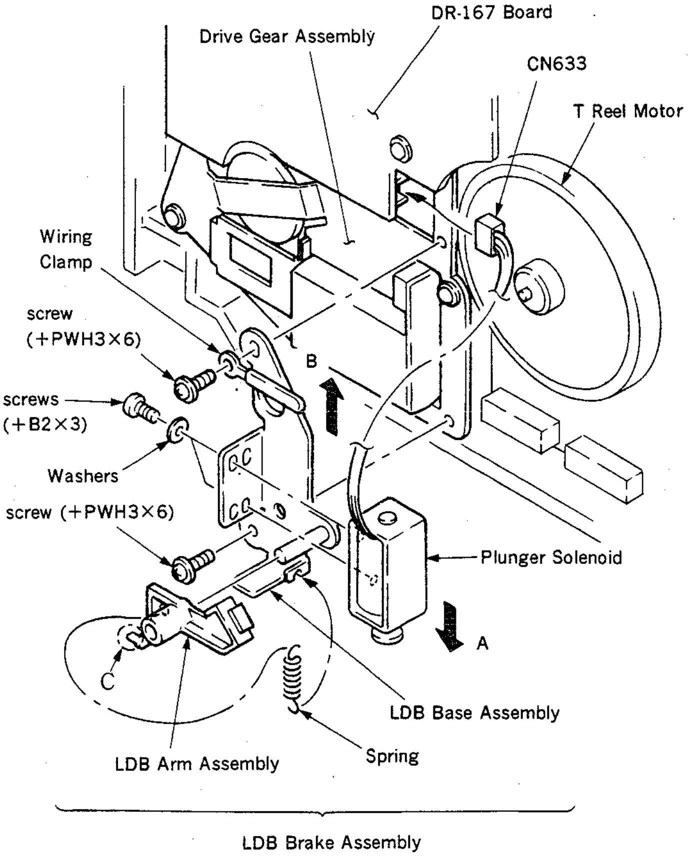
Note on installation

①When installing the plunger solenoid on the LDB base ass'y first temporarily install it with the two screws and two washers, then move it fully in the direction of arrow A and tighten the screws hard.

②When installing the LDB brake ass'y on the drive gear ass'y, temporarily install it with the two screws and the wiring clamp, then move it fully in the direction of arrow B and tighten the screws hard.

③Fix the harness of the plunger solenoid with the wiring clamp in such a way that it does not touch the T reel motor.

④Apply a dab of MOLYKOTE grease to part C shown in the drawing after replacing the LDB arm ass'y with a new one.


DR-167 Board
Drive Gear Assembly
CN633
T Reel Motor
Wiring Clamp
screw (+PWH3×6)
B
screws (+B2×3)
Washers
screw (+PWH3×6)
Plunger Solenoid
A
C
LDB Base Assembly
Spring
LDB Arm Assembly
LDB Brake Assembly

SECTION 5
TORQUE AND TAPE TENSION ALIGNMENT

5-1. S/T REEL TABLE TORQUE ADJUSTMENT

Tools :
Torque gauge (H-7099-039-H)
Torque gauge adapter (H-7099-035-H)
Short clip

Adjustment Procedure :

(1) Remove the cassette compartment according to Sec. 2-2.
(2) Set No.1 and No.8 switches of DIP switch S101/SS-49 board (J-9) to ON. (Fig. 1)
(3) Short TP304 (D-9) and E5 (C-9) on the SS-49 board with a shorting clip. (Fig. 1)
(4) Press the cassette down switch manually, and while keeping it depressed, turn the POWER switch ON. (Fig. 2)
(5) Put the SVP-9020 in the PLAY mode.

S side reel table adjustment

(6) Stop the S side reel table manually, and install the torque meter. (Fig. 3)
(7) Adjust RV303/SS-49 board (C-9) so that the value on the torque meter meet the required specification.

T side reel table adjustment

(8) Stop the T side reel table manually, and install the torque meter. (Fig. 3)
(9) Adjust RV304/SS-49 board (C-9) so that the value on the torque meter meet the required specification.
(10) After completion of adjustments, remove the shorting clip.
(11) Set No.1 and No.8 switches of S101 to OFF.

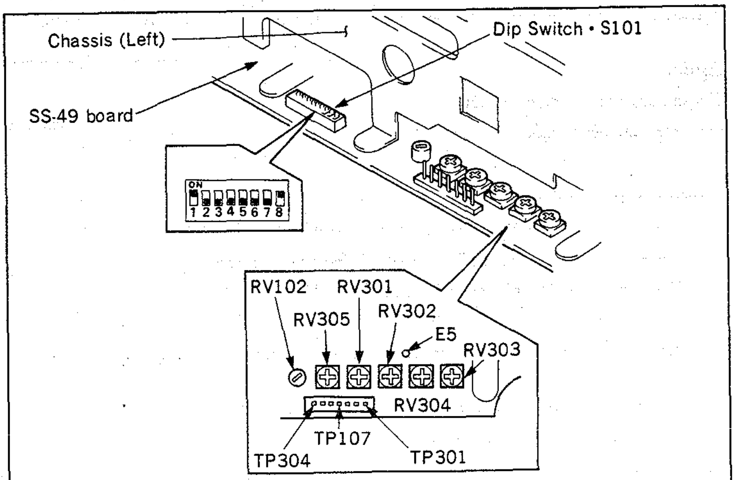

Chassis (Left)
Dip Switch • S101
SS-49 board
ON
1 2 3 4 5 6 7 8
RV102
RV301
RV305
RV302
E5
RV303
RV304
TP107
TP304
TP301

Fig. 1

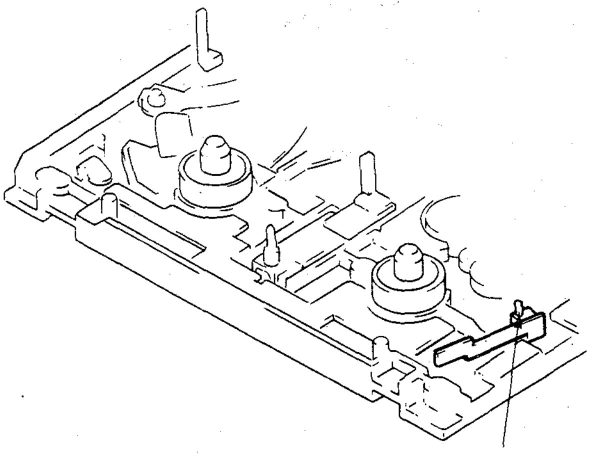

Cassette Down Switch

Fig. 2

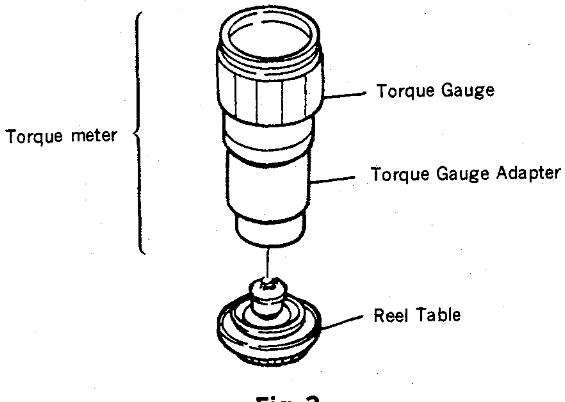

Torque meter
Torque Gauge
Torque Gauge Adapter
Reel Table

Fig. 3

Spec. :
S/T Side 〔147±5〕×10^{-4} N•m (150±5 g•cm)

5-2. TAPE TENSION ADJUSTMENT

Be sure to perform this adjustment after replacing a part of the tape run system, such as the drum or tension regulator. Also, be sure to check the tape tension when performing a periodic check.

Tools:
Tentelometer, T2-H7-UMC
S-VHS cassette tape, T-120

Adjustment Procedure:

(1) To prevent the tape from touching the tentelometer, rotate the tape stabilizer in the direction of the arrow until it strikes the chassis (left), then insert the bamboo skewer, or the like, at point "a" shown in the figure, and fix it in place. (Fig. 1)

(2) Insert a cassette tape (T-120) in this unit, then put this unit into the PLAY mode.

(3) Install the tentelometer between the TG-3 guide and the TG-5 guide. (Fig. 1)

(4) Adjust RV301/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 1.

(5) Enter the SEARCH REV mode.

(6) Adjust RV302/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 2.

(7) Enter the PAUSE mode.

(8) Adjust RV305/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 3.

(9) Confirm that each of the tape tensions meet the required specification 1 and 3.
During PLAY mode, tape tension required as Spec. 1, and PAUSE mode, tape tension required as Spec. 3.

(10) Confirm that each of the tape tensions meet the required specification 2 and 3.
During SEARCH REV mode, tape tension required as Spec. 2, and PAUSE mode, tape tension required as Spec. 3.

(11) Remove the tentelometer and bamboo skewer, then press the EJECT button and remove the cassette tape.

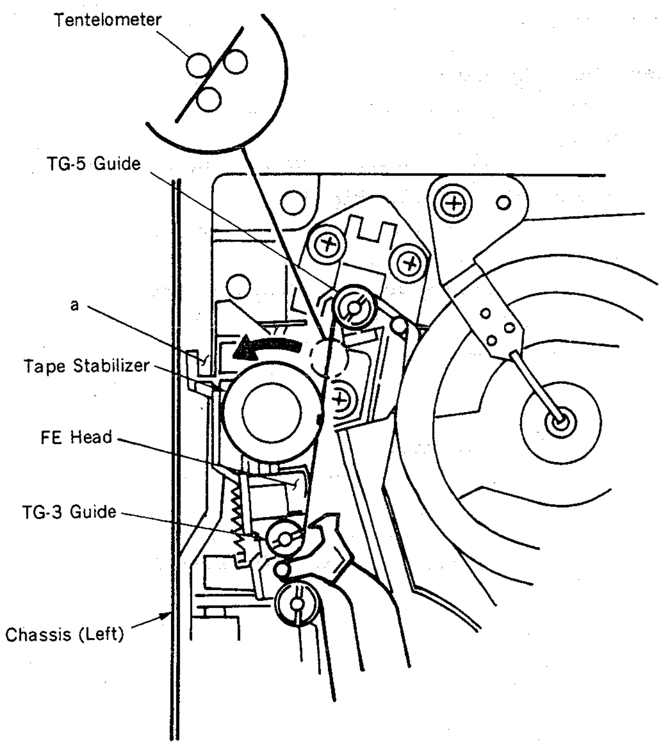


Fig. 1

Spec. 1: Tape tension in the PLAY mode
$[245 \pm 25] \times 10^{-3}$ N (25±2.5 g)

Spec. 2: Tape tension in the SEARCH REV mode
$[392 \pm 25] \times 10^{-3}$ N (40±2.5 g)

Spec. 3: Tape tension in the PAUSE mode
$[216 \pm 20] \times 10^{-3}$ N (22±2 g)

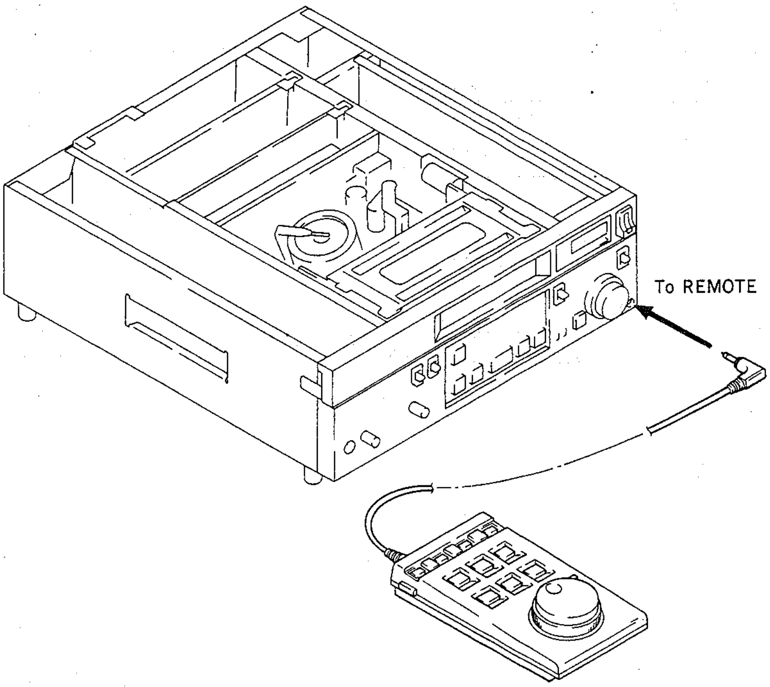
SECTION 6
TAPE RUN ALIGNMENT

The tape run system has been adjusted before leaving the factory. If a part in the transport is replaced, therefore, the new part should be adjusted carefully to ensure that the tape transport is stable.
This section covers the entire adjustment procedure from coarse adjustment to fine adjustment.
Before commencing adjustment, remove the top panel of the SVP-9020.

[Adjustment preparations]

1) **Remote controller**
   The SVP-9020 can be also operated by the remote controller (SVRM-100, RM-V200, RM-V100, etc.)

Connecting the remote controller

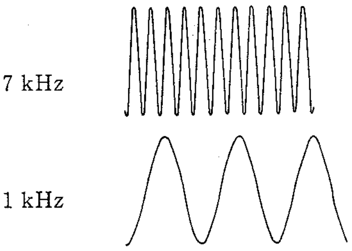


SVRM-100

2) Equipment and tool

- Oscilloscope
- Tentelometer, T2-H7-UMC
- Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
- Small adjustment mirror (J-6080-840-A)
- X value adjustment tool (J-6380-710-A)
- X value adjustment tool connecting cable (See sub-section 6-9) (Must be provided by the service side.)
- RP extension tool (J-6381-370-A)
- S-VHS cassette tapes, T-160 and T-120
- Alignment tape, JVC-MH-2 (H-7099-052-H)
- Alignment tape, KRV-4821PSA (8-192-602-48)
- Alignment tape, KRV-45HPS (Pending)

Signals recorded on the alignment tape

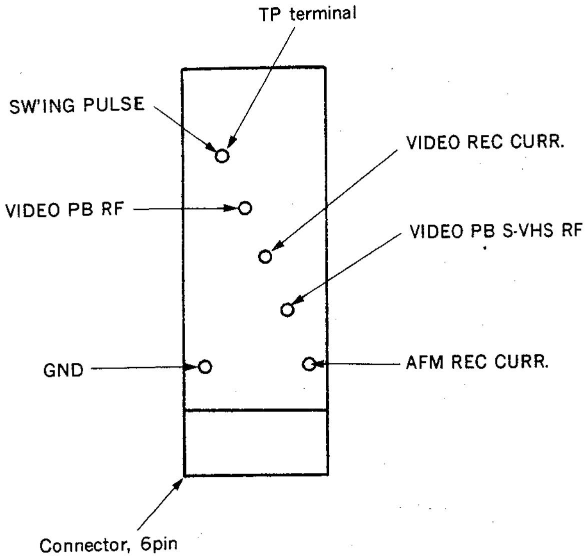
Name (Part No.)	Recording mode	Signals recorded on the tape	
		Video area	Audio area
JVC-MH-2 (H-7099-052-H)	SP	• Stairstep 10 min • No signal 5 min • Color bars 10 min • RF sweep 3 min Markers : 2.0 MHz 4.0 MHz 5.0 MHz	• 7 kHz 10 min • 3 kHz 5 min • 1 kHz (0 dB) 10 min • No signal 3 min
KRV-4821PSA (8-192-602-48)	SP	• 1 MHz (CH-1 only) } • 1 V blanking every 60 V } 120 min	• 7 kHz 120 min } • 1 kHz 120 min } MIX 
KRV-45HPS (S-VHS) (Pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 s, 400 Hz 15 s (alternatery) • Hi-Fi audio 400 Hz (stereo)

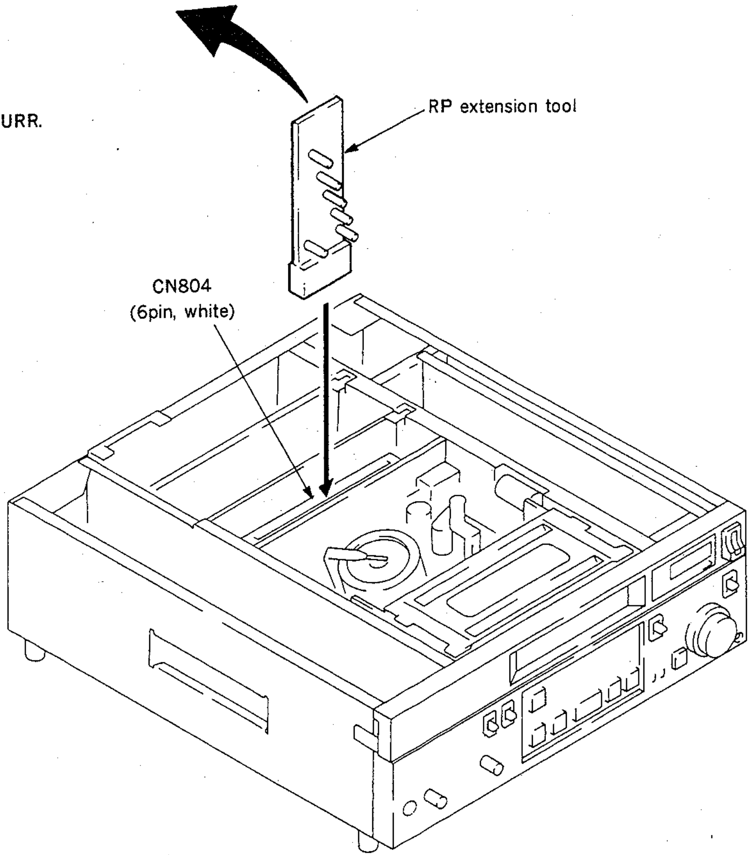
RP extension tool

This extension tool is used to take off the signal output from the check connector CN804 on the RP-62 board so as to enable it to be connected easily to a probe.
It is intended to be inserted into connector CN804.

CN804 output signal

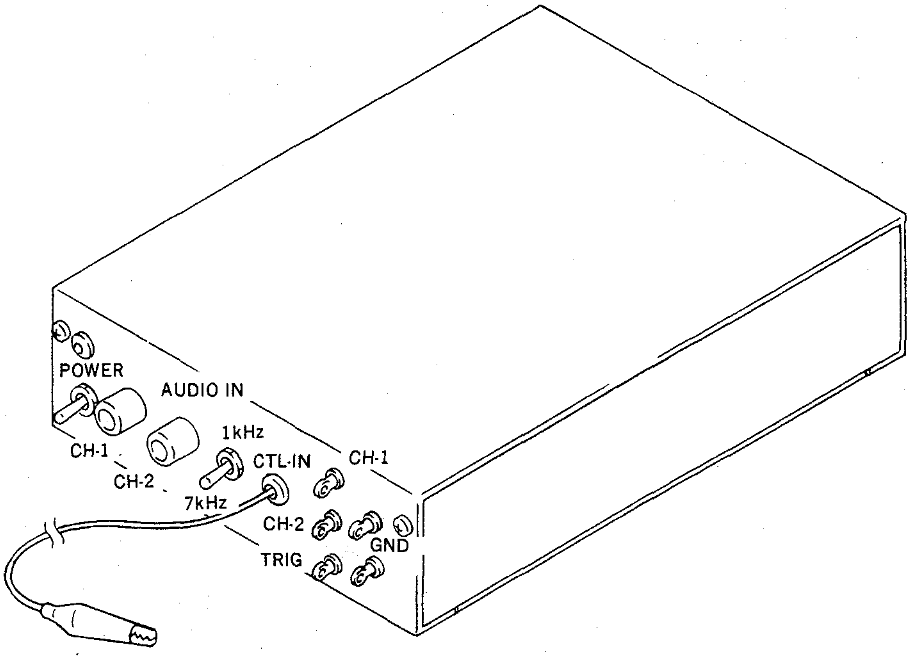
Pin No.	Output Signal
1	AFM REC CURRENT
2	S-VHS • VIDEO PB RF OUT
3	VIDEO REC CURRENT
4	VHS • VIDEO PB RF OUT
5	RF SWITCHING PULSE
6	GND


TP terminal
SW'ING PULSE
VIDEO REC CURR.
VIDEO PB RF
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6pin


RP extension tool
CN804
(6pin, white)

X value adjustment tool

This tool is used when adjusting the height of the audio head, the azimuth, zenith, head-to-tape contact and the X value (position of audio head).
Power is supplied from two internal dry batteries (9V).
When replacing the dry batteries, remove the four screws at the bottom, and open the bottom plate of the tool.
Note:
The batteries will run down quickly if the POWER switch of the tool is left switched ON.

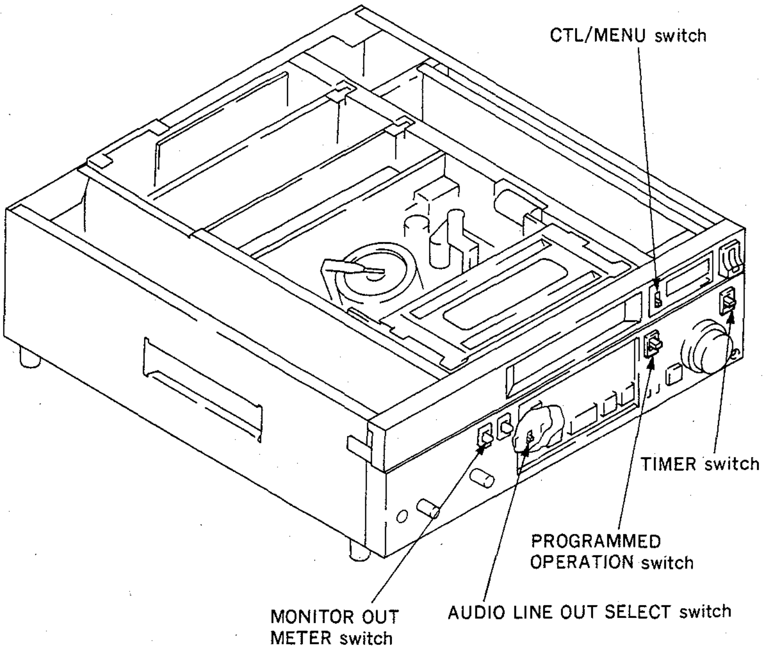

POWER
AUDIO IN
CH-1
CH-2
1kHz
7kHz
CTL-IN
CH-1
CH-2
GND
TRIG

X value adjustment tool

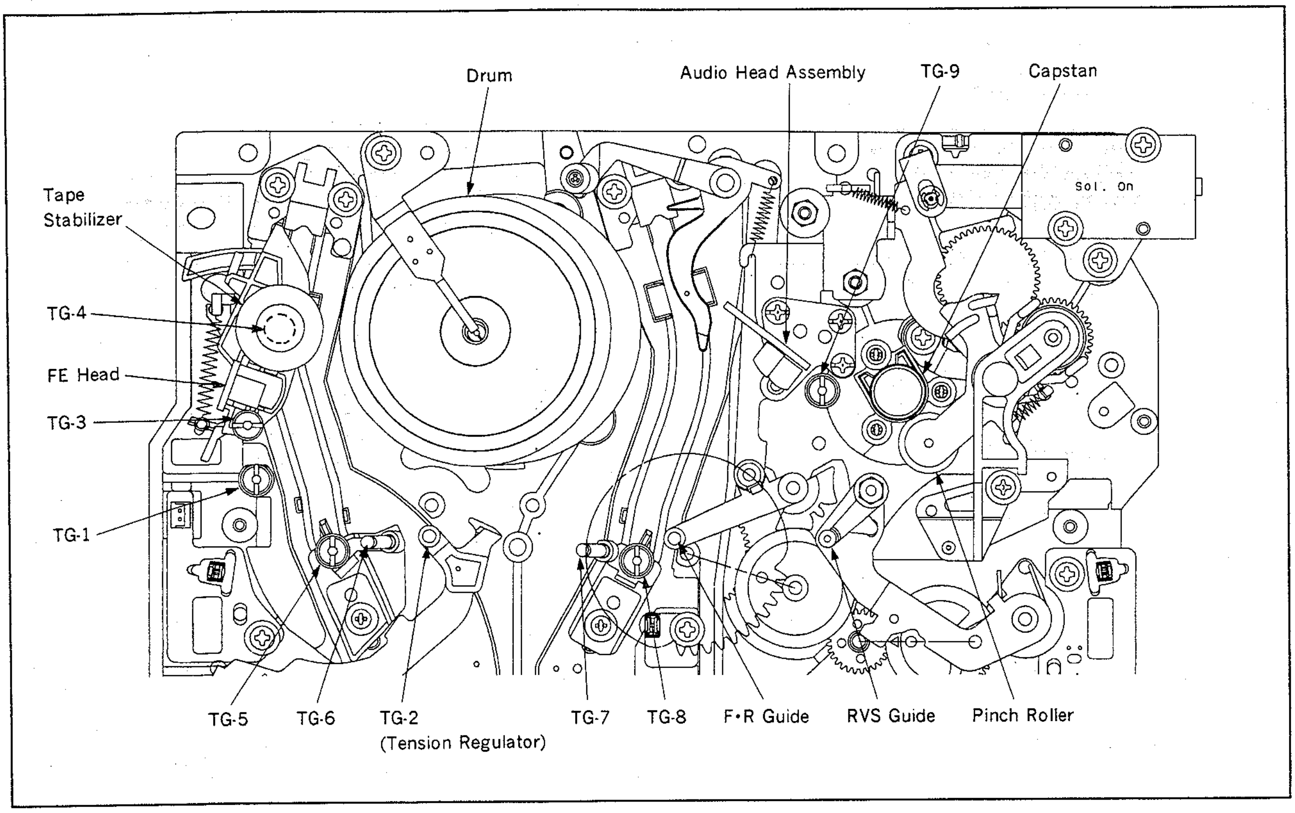
3) Switch setting

Set the switches of the front panel and the sub panel as follow.

	Select Switch	Setting Position
Front Panel	PROGRAMMED OPERATION	OFF
	CTL/MENU	CTL
	TIMER	OFF
	MONITOR OUT METER	NORM
Sub Panel	AUDIO LINE OUT SELECT	NORM

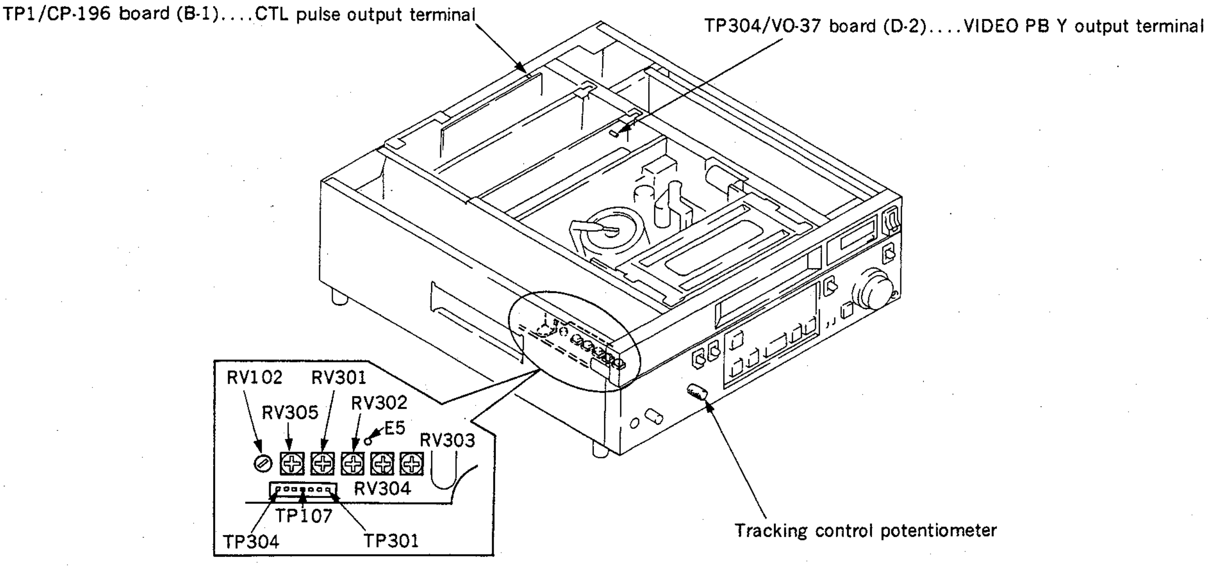

CTL/MENU switch
TIMER switch
PROGRAMMED OPERATION switch
AUDIO LINE OUT SELECT switch
MONITOR OUT METER switch

[Tape guide layout drawing]


Drum
Audio Head Assembly
TG-9
Capstan
Sol. on
Tape Stabilizer
TG-4
FE Head
TG-3
TG-1
TG-5
TG-6
TG-2
(Tension Regulator)
TG-7
TG-8
F•R Guide
RVS Guide
Pinch Roller

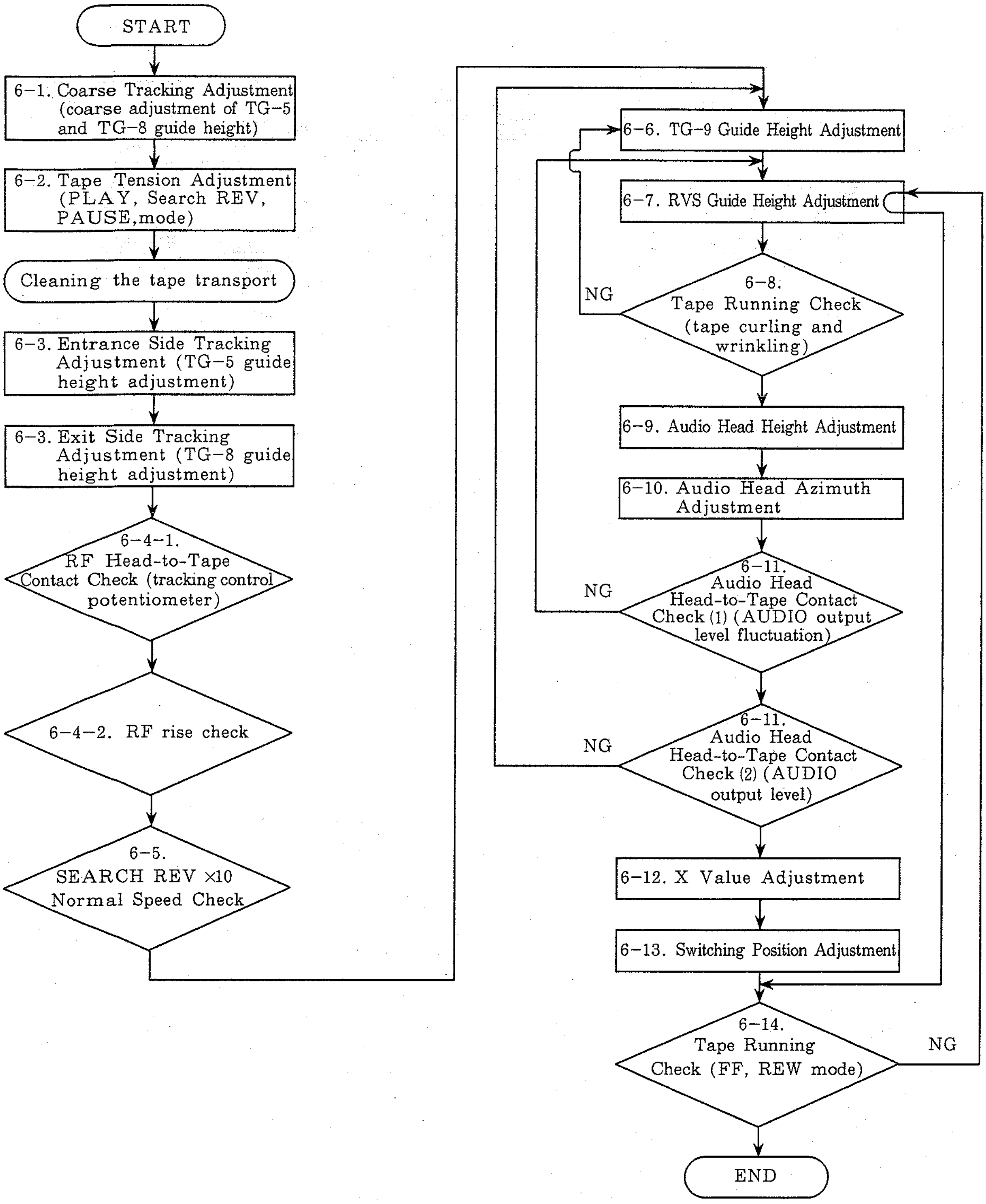
[Position of potentiometers and TP terminals]

The positions of the adjustment potentiometers and TP terminals are shown in the figure below. (The figure below shows the VTR with the top panel removed.)


TP1/CP-196 board (B-1)....CTL pulse output terminal
TP304/VO-37 board (D-2)....VIDEO PB Y output terminal
RV102
RV301
RV305
RV302
E5
RV303
RV304
TP107
TP304
TP301
Tracking control potentiometer

- RV301....PLAY mode tape tension adjustment potentiometer
- RV302....Search REV mode tape tension adjustment potentiometer
- RV305....PAUSE mode tape tension adjustment potentiometer
- RV102....Switching position adjustment potentimeter

[Adjustment Flow Chart]


START
6−1. Coarse Tracking Adjustment (coarse adjustment of TG−5 and TG−8 guide height)
6−2. Tape Tension Adjustment (PLAY, Search REV, PAUSE,mode)
Cleaning the tape transport
6−3. Entrance Side Tracking Adjustment (TG−5 guide height adjustment)
6−3. Exit Side Tracking Adjustment (TG−8 guide height adjustment)
6−4−1. RF Head-to-Tape Contact Check (tracking control potentiometer)
6−4−2. RF rise check
6−5. SEARCH REV ×10 Normal Speed Check
6−6. TG−9 Guide Height Adjustment
6−7. RVS Guide Height Adjustment
NG
6−8. Tape Running Check (tape curling and wrinkling)
6−9. Audio Head Height Adjustment
6−10. Audio Head Azimuth Adjustment
NG
6−11. Audio Head Head-to-Tape Contact Check (1) (AUDIO output level fluctuation)
NG
6−11. Audio Head Head-to-Tape Contact Check (2) (AUDIO output level)
6−12. X Value Adjustment
6−13. Switching Position Adjustment
6−14. Tape Running Check (FF, REW mode)
NG
END

6-1. COARSE TRACKING ADJUSTMENT

Tools :

Oscilloscope
RP extension tool (J-6381-370-A)
Alignment tape, KRV-4821PSA
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)

Adjustment Procedure :

(1) Connect the oscilloscope as follows.
    CH-1 : VIDEO PB RF terminal/RP extension tool
    TRIG : SW'ING PULSE terminal/RP extension tool
    GND : GND terminal/RP extension tool
(2) Playback the alignment tape.
(3) Turn the tracking control potentiometer on the front panel until the center part of the RF waveform is maximum. (Fig. 2)
(4) Turn the upper flange of the TG-5 guide until the RF waveform at the entrance side is virtually flat. (Fig. 3)
(5) Turn the upper flange of the TG-8 guide until the RF waveform at the exit side is virtually flat. (Fig. 4)
(6) Turn the tracking control potentiometer until the center part of the RF waveform is maximum.
(7) Press the EJECT button, and remove the alignment tape.

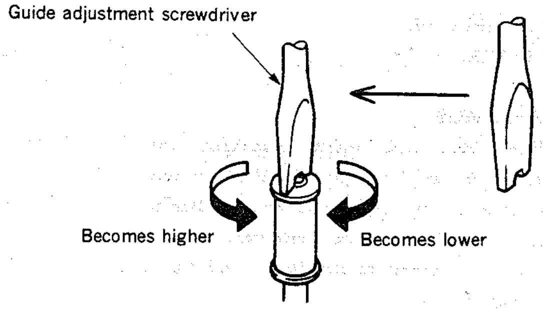

Guide adjustment screwdriver
Becomes higher
Becomes lower

Fig. 1 Tape Guide Height Adjustment Method.

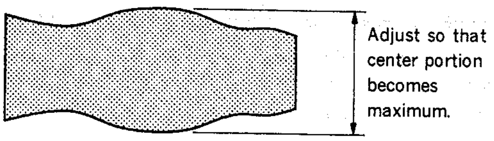

Adjust so that center portion becomes maximum.

Fig. 2

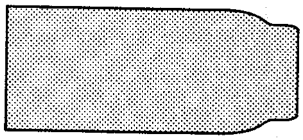


Fig. 3

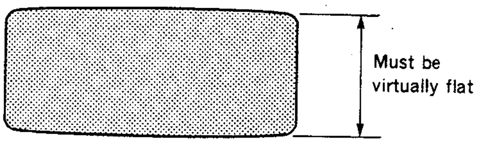

Must be virtually flat

Fig. 4

6-2. TAPE TENSION ADJUSTMENT

Tools :
Tentelometer, T2-H7-UMC
S-VHS cassette tape, T-120

Adjustment Procedure :

(1) To prevent the tape from touching the tentelometer, rotate the tape stabilizer in the direction of the arrow until it strikes the chassis (left), then insert the bamboo skewer, or the like, at point "a" shown in the figure, and fix it in place. (Fig. 1)

(2) Insert a cassette tape (T-120) in the VTR, then put the VTR into the PLAY mode.

(3) Install the tentelometer between the TG-3 guide and the TG-5 guide. (Fig. 1)

(4) Adjust RV301/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 1.

(5) Enter the SEARCH REV mode.

(6) Adjust RV302/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 2.

(7) Enter the PAUSE mode.

(8) Adjust RV305/SS-49 board (D-9) so that the value on the tentelometer meet the required specification 3.

(9) Confirm that each of the tape tensions meet the required specification 1 and 3. During PLAY mode, tape tension required as Spec. 1, and PAUSE mode, tape tension required as Spec. 3.

(10) Confirm that each of the tape tensions meet the required specification 2 and 3. During SEARCH REV mode, tape tension required as Spec. 2, and PAUSE mode, tape tension required as Spec. 3.

(11) Remove the tentelometer and bamboo skewer, then press the EJECT button and remove the cassette tape.

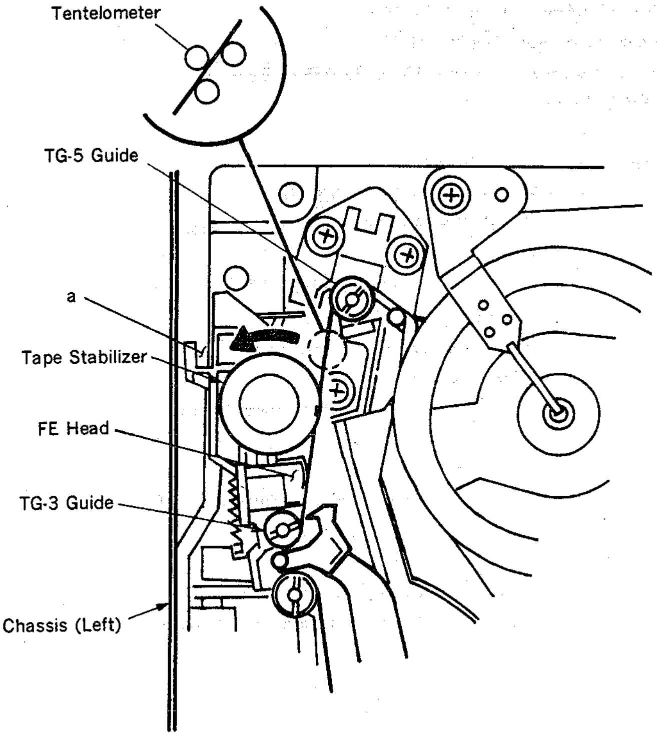


Fig. 1

Spec. 1 : Tape tension in the PLAY mode
$[245 \pm 25] \times 10^{-3}$ N (25±2.5 g)

Spec. 2 : Tape tension in the SEARCH REV mode
$[392 \pm 25] \times 10^{-3}$ N (40±2.5 g)

Spec. 3 : Tape tension in the PAUSE mode
$[216 \pm 20] \times 10^{-3}$ N (22±2 g)

6-3. TRACKING ADJUSTMENT

Tools:
Oscilloscope
RP extension tool (J-6381-370-A)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)
Alignment tape, KRV-4821PSA

Cleaning prior to adjustment:
Clean the following parts with a cleaning piece moistened with cleaning fluid.

- TG-1 to TG-9, RVS and F • R tape guide
- Audio head, FE head, capstan, pinch roller
- Rotary head, tape run face of upper and lower drums

[Note: Method of cleaning the rotary head]
Press the cleaning piece gently against the rotary head, then rotate the upper drum slowly in the counterclockwise direction manually to clean the head.

Adjustment Procedure:

(1) Connect the oscilloscope as follows.
CH-1: VIDEO PB RF terminal/RP extension tool
TRIG: SW'ING PULSE terminal/RP extension tool
GND: GND terminal/RP extension tool

(2) Playback the alignment tape.

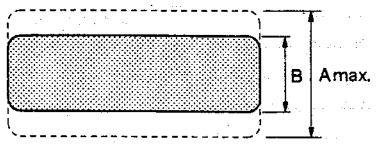
Entrance side adjustment:

(3) Turn the tracking control potentiometer on the front panel until the RF waveform is 70 to 80% of maximum. (Fig. 1)

(4) Turn the upper flange of the TG-5 guide clockwise until the RF waveform at the left hand side is as shown in Fig. 2.

(5) Turn the upper flange on the TG-5 guide in the counterclockwise direction until the RF waveform at the left hand side is flat. (Fig. 3)
Note:
- Complete the height adjustment of TG-5 with the guide turned counterclockwise.

(6) Turn the tracking control potentiometer on the front panel counterclockwise until the RF waveform is 70 to 80% of maximum, then confirm that the RF waveform at the left hand side is virtually flat. (Fig. 4)



$\frac{B}{Amax.} = 0.7 \sim 0.8$

Fig. 1

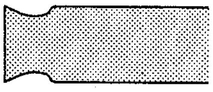


Fig. 2

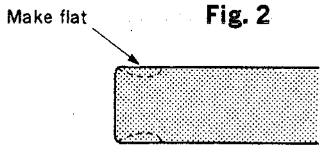
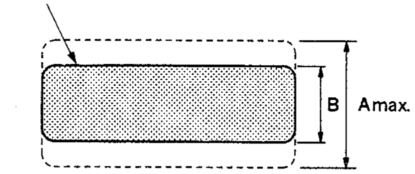


Fig. 3



Spec.:
RF waveform at entrance side must be virtually flat when $\frac{B}{Amax.} = 0.7$ to 0.8.

Fig. 4

Exit side adjustment:

(7) Turn the tracking control potentiometer on the front panel until the RF waveform is 70 to 80% of maximum. (Fig. 1)

(8) Turn the upper flange of the TG-8 guide clockwise until the RF waveform on the right hand side is as shown in Fig. 5.

(9) Turn the upper flange of the TG-8 guide counterclockwise until the RF waveform on the right hand side is flat (Fig. 6).

Note:

- Complete the height adjustment of TG-8 with the guide turned counterclockwise.

(10) Turn the tracking control potentiometer on the front panel counterclockwise until the RF waveform is 70 to 80% of maximum, then confirm that the RF waveform at the right hand side is virtually flat. (Fig. 7)

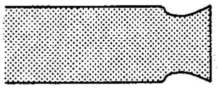


Fig. 5

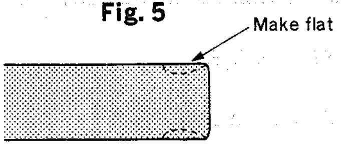
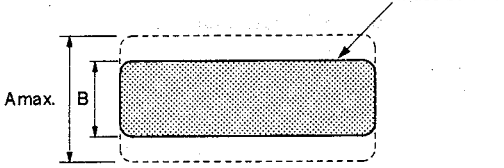


Fig. 6



Spec.:

RF waveform at exit side must be virtually flat when $\frac{B}{\text{Amax.}}$ =0.7 to 0.8.

Fig. 7

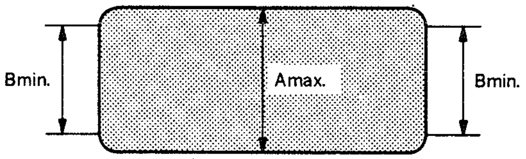
6-4. CHECKING AFTER TRACKING ADJUSTMENT

Tools :
Oscilloscope
RP extension tool (J-6381-370-A)
Alignment tape, KRV-4821PSA

- Connect the oscilloscope as follows.
  CH-1 : VIDEO PB RF terminal/RP extension tool
  TRIG : SW'ING PULSE terminal/RP extension tool
  GND : GND terminal/RP extension tool

6-4-1. RF head-to-tape contact check

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel until the center of the RF waveform is maximum.
(3) Confirm that the RF waveform meet the specification.



Spec. : $\frac{\text{Bmin.}}{\text{Amax.}} \geqq 0.8$

6-4-2. RF rise check

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel until the center of the RF waveform becomes maximum.
(3) Put the VTR in each of the following modes in turn, and confirm that the rise time of the RF waveform meet the specification. (Fig. 1)
① SEARCH REV → PLAY
② SEARCH FWD → PLAY
③ STOP → PLAY
(4) Enter the Search REV mode, and confirm that there is no missing of the RF waveform at the entrance side. (Fig. 2)

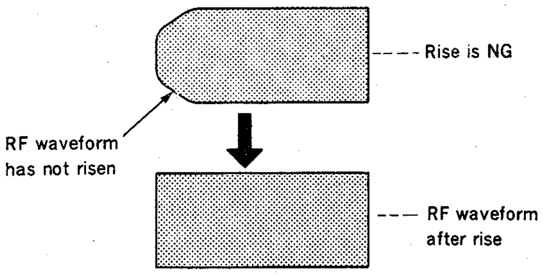


Fig. 1

Spec. :	RF rise time
① SEARCH REV → PLAY	Within 3 s
② SEARCH FWD → PLAY	Within 3 s
③ STOP → PLAY	Within 3 s

• The rise time is the time from when the RF waveform appears on the oscilloscope.

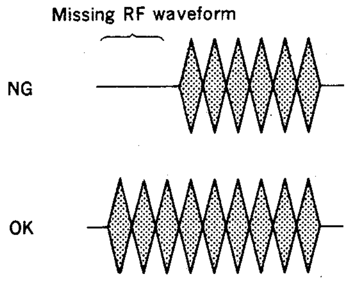


Fig. 2

6-5. SEARCH REV ×10 NORMAL SPEED CHECK

Tools :

Oscilloscope
Alignment tape, KRV-45HPS
RP extension tool (J-6381-370-A)
Remote controller : SVRM-100 or RM-V100, RM-V200

Checking Procedure :

(1) Connect the oscilloscope as follows.
  CH-1 : VIDEO PB S-VHS RF terminal/RP extension tool
  TRIG : SW'ING PULSE terminal/RP extension tool
  GND : GND terminal/RP extension tool
(2) Load the alignment tape in this unit.
(3) Using the remote controller, enter the SEARCH REV mode (×10 times normal speed), and play back the color bars that were recorded in the SP mode.
(4) Confirm that an RF waveform appears at SP1, SP2, EP1 and EP2. (Fig. 1) Also, confirm that an RF waveform appears at the entrance side. (Fig. 2) (Fig. 3)

If there is not appear the RF waveform.

Check the following points.

①Does the tape curl or become wrikled between the TG-5 guide, drum and the TG-8 guide ?
  If curling or wrinkling occurs → re-adjust the height of the TG-5 and TG-8 guides.
②Check the circuit between pin 23 of IC201 and pin 2 of CN804 on the RP-62 board.
③Confirm that the voltage input to pin 28 of IC201 on the RP-62 board is between 2.15 and 2.7 Vdc.

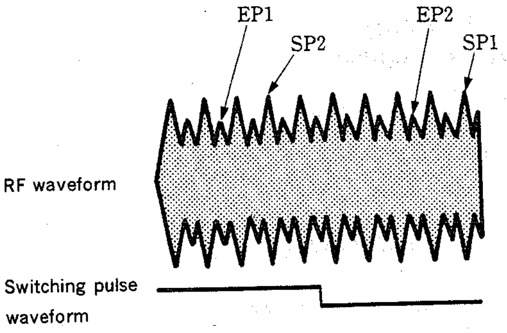

EP1
SP2
EP2
SP1
RF waveform
Switching pulse waveform

Fig. 1

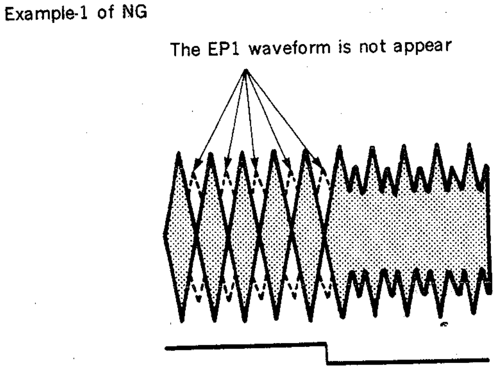

Example-1 of NG
The EP1 waveform is not appear

Fig. 2

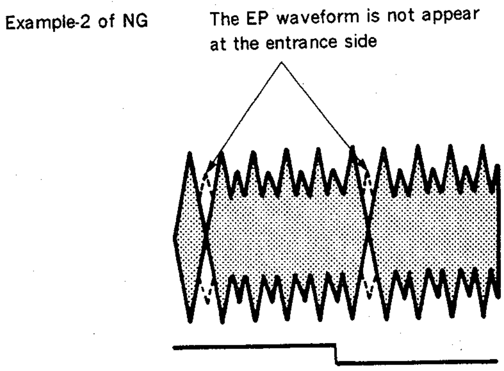

Example-2 of NG
The EP waveform is not appear at the entrance side

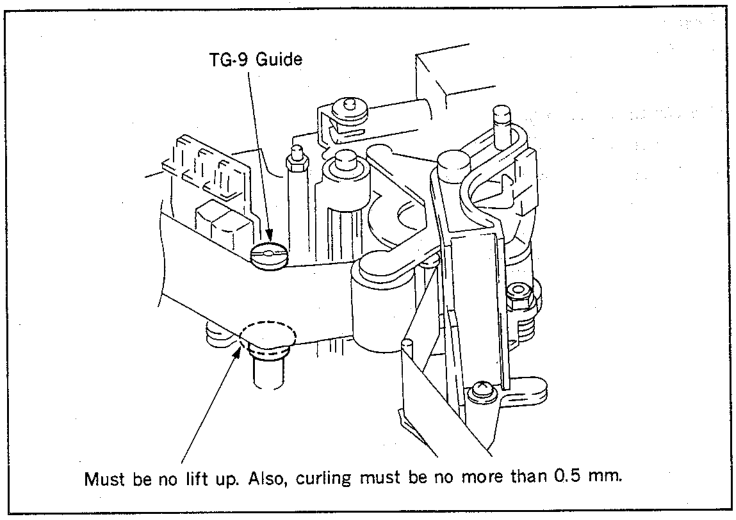
Fig. 3

6-6. TG-9 GUIDE HEIGHT ADJUSTMENT

Tools :
S-VHS cassette tape (T-160)
Guide adjustment screwdriver (J-6082-044-A or J-6080-811-A)

Adjustment Procedure :

(1) Insert a cassette tape (T-160) in this unit, then put this unit in the PLAY mode.
(2) Turn the upper flange of the TG-9 guide, and pass the tape along the lower flange.


TG-9 Guide
Must be no lift up. Also, curling must be no more than 0.5 mm.

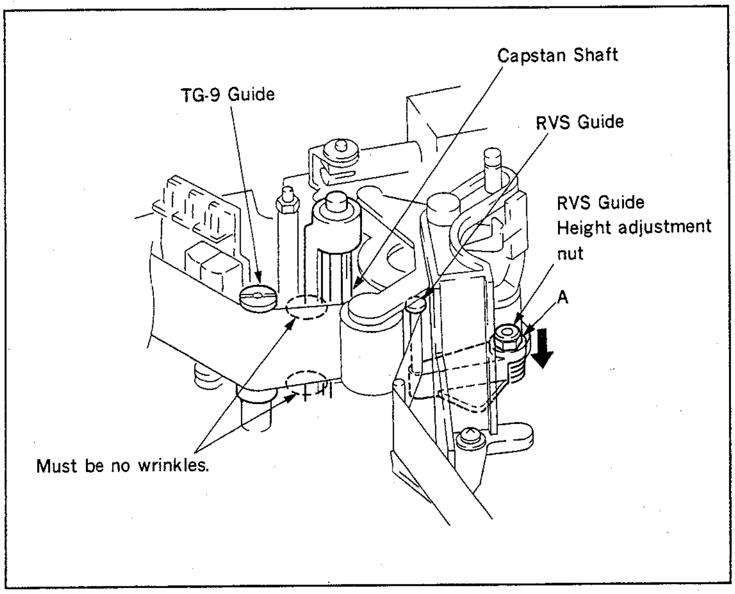
6-7. RVS GUIDE HEIGHT ADJUSTMENT

Tools :
S-VHS cassette tape (T-160)
Box screwdriver (width 5.5 mm)

Adjustment Procedure :

(1) Enter the Search REV mode using the first 10 minutes or less of the tape..
(2) Turn the RVS guide height adjustment nut until wrinkling of the tape between the TG-9 guide and the capstan shaft that occurs when the VTR is switched from the search REV mode to the search FWD mode, or vice-versa, disappears in less than 3 seconds.

Direction of adjustment of RVS guide height adjustment nut
If the wrinkling of the tape decreases when part A indicated in the figure (bottom of adjustment nut) is pressed in the direction of the arrow, turn the RVS guide height adjustment nut clockwise. If the wrinkling increases, turn the nut counterclockwise.


Capstan Shaft
TG-9 Guide
RVS Guide
RVS Guide
Height adjustment
nut
A
Must be no wrinkles.

6-8. TAPE RUNNING CHECK (check to be performed subsequent to adjustments of sections 6-1 to 6-7)

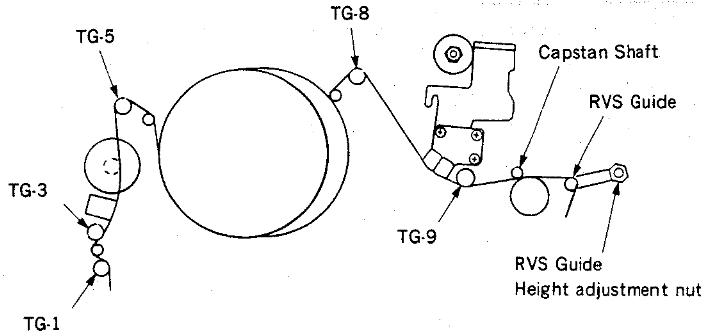
Tool :
S-VHS cassette tape (T-160)

Checking Procedure :

(1) Insert a cassette tape (T-160) in this unit.
(2) Confirm that the curling of the tape at the TG-1, TG-3, TG-5, TG-8 and TG-9 guides in both the Search FWD and SEARCH REV modes meet the specification.

If the specification is not satisfied :

(3) Re-adjust the TG-9 and RVS guides height according to sub-sections 6-6 and 6-7.
(4) Check step (2).


TG-8
TG-5
Capstan Shaft
RVS Guide
TG-3
TG-9
RVS Guide
Height adjustment nut
TG-1

Spec. :
TG-1, TG-3, TG-5, TG-8, TG-9 Guides......Tape curling must be within 1 mm.

6-9. AUDIO HEAD HEIGHT ADJUSTMENT

Tools:
Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape, KRV-4821PSA or JVC-MH-2
Box screwdriver, width 5.5mm
Connecting cables (two) (to be provided by the service side)....Fig. 1

Connecting the tool:

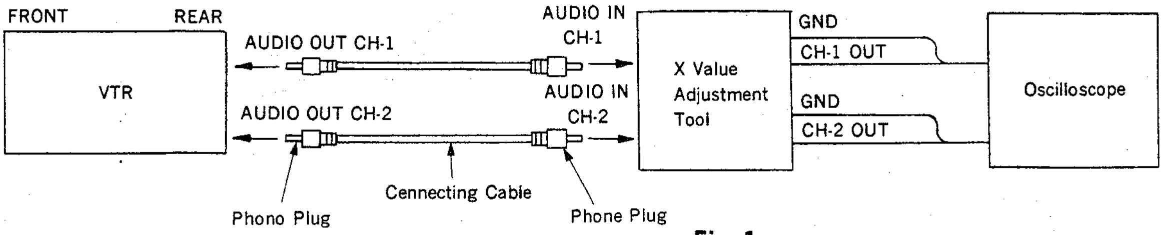

FRONT
REAR
VTR
AUDIO OUT CH-1
AUDIO OUT CH-2
AUDIO IN CH-1
AUDIO IN CH-2
X Value Adjustment Tool
GND
CH-1 OUT
GND
CH-2 OUT
Oscilloscope
Cennecting Cable
Phono Plug
Phone Plug

Fig. 1

Adjustment Procedure:

(1) Set the switch on the X value adjustment tool to the 1kHz side.

(2) Turn the POWER switch of the X value adjustment tool ON.

(3) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 1 KHz part.)

(4) Turn the audio head height adjustment nut until the level of both CH-1 and CH-2 is maximum. (Fig. 2, Fig. 3)

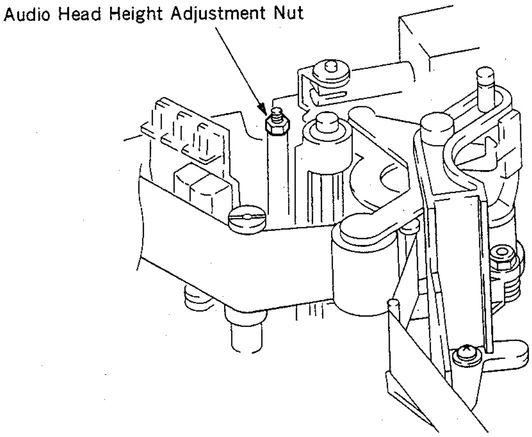

Audio Head Height Adjustment Nut

Fig. 2

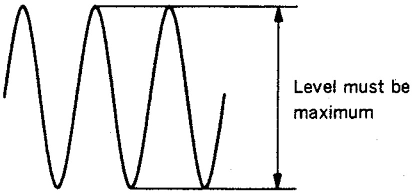

Level must be maximum

Fig. 3

6-10. AUDIO HEAD AZIMUTH ADJUSTMENT

Tools:

Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape, KRV-4821PSA or JVC-MH-2
Connecting cables (two) (See sub-section 6-9.)

Connecting the tool: Same as sub-section 6-9

Adjustment Procedure:

(1) Set the switch on the X value adjustment tool to the 7kHz side.
(2) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 7KHz part.)

Output level adjustment

(3) Turn the azimuth adjustment screw until the resurge waveform on the oscilloscope meet the specification 1. (Fig. 1, Fig. 2)

Azimuth adjustment

(4) Turn the azimuth adjustment screw until the resurge waveform on the oscilloscope meet the specification 2. (Fig. 2)

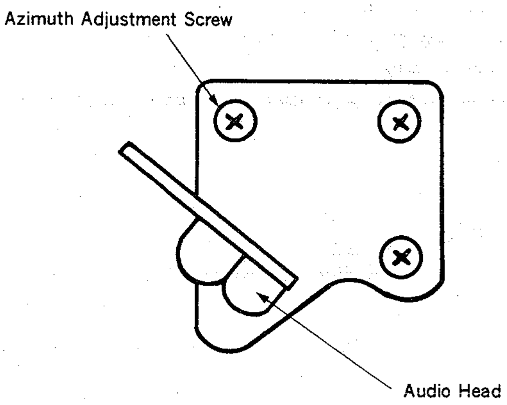


Fig. 1

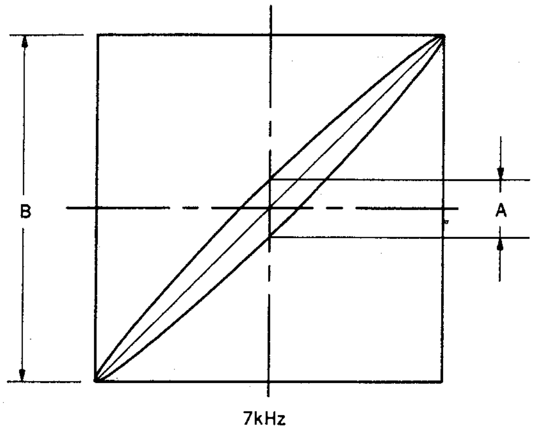


Fig. 2

Spec. 1:
B must be the maximum level.

Spec. 2:
A must be no more than 1cm when level B is 6cm.

6-11. AUDIO HEAD HEAD-TO-TAPE CONTACT CHECK

Tools :
Oscilloscope
X value adjustment tool (J-6380-710-A)
Alignment tape KRV-4821PSA or JVC-MH-2
Connecting cables (two) (See sub-section 6-9.)

Connecting the tool: Same as Sec. 6-9

Checking Procedure:

(1) Set the switch on the X value adjustment tool to the 7KHz side.
(2) Playback the alignment tape (KRV-4821PSA). (When using JVC-MH-2 tape, playback the 7KHz part.)

Level fluctuation check

(3) Confirm that the level fluctuation of both CH-1 and CH-2 meet the specification. (Fig. 1)

If the specification is not satisfied:

(4) Turn the TG-9 guide counterclockwise until the specification is satisfied. (Fig. 2) (Tape curling must be no more than 0.5mm.)
(5) Return to Sec. 6-7 and repeat adjustment up to Sec. 6-10.
(6) Check step (3).

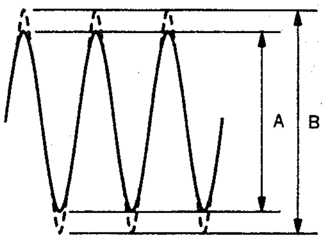
Output level check

(7) Press the top of the tape (AUDIO track part) as indicated by the arrow gently with the tip of the finger, and confirm that the increase in level conforms to the specification for both CH-1 and CH-2. (Fig. 2 and Fig. 3)

If the specification is not satisfied:

(8) Turn the zenith adjustment screw of the audio head 90° clockwise.
(9) Return to Sec. 6-6 and repeat adjustment up to Sec. 6-10.
(10) Check steps (3) and (7).

Level Fluctuation



Spec.: A≧0.9B

Fig. 1

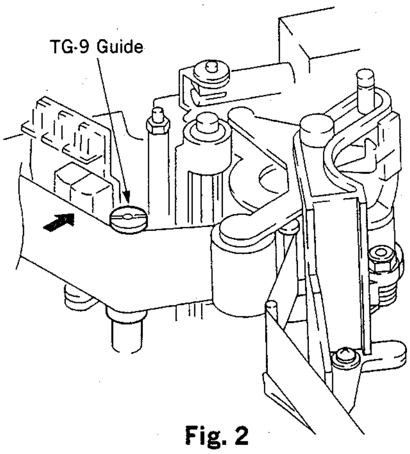
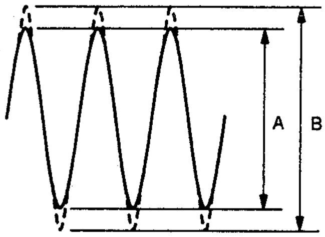


Fig. 2

Output Level



Spec.: B≦1.2A

A: Initial level
B: Level when the tape is pressed with the finger.

Fig. 3

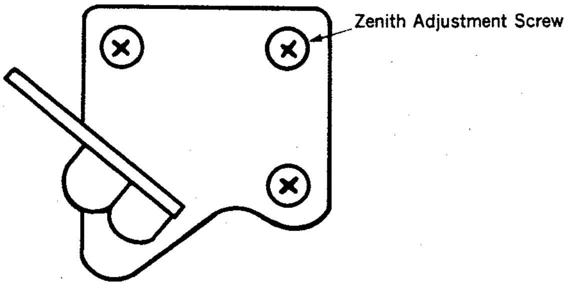


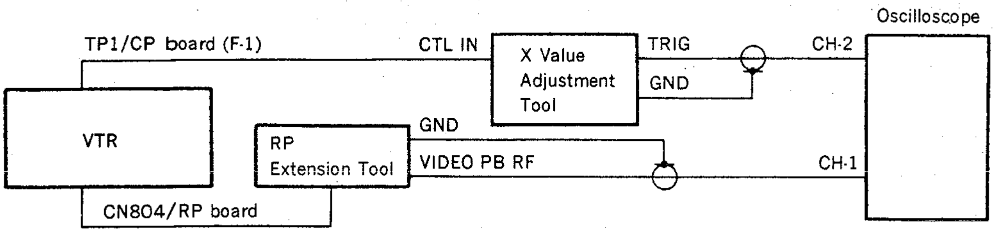
Fig. 4

6-12. X VALUE ADJUSTMENT (AUDIO HEAD POSITION ADJUSTMENT)

Tools :

Oscilloscope
X value adjustment tool (J-6380-710-A)
RP extension tool (J-6381-370-A)
Alignment tape, KRV-4821PSA
Box screwdriver, 5.5mm width
Connecting cable

Connecting the tool :


Oscilloscope
TP1/CP board (F-1)
CTL IN
X Value Adjustment Tool
TRIG
CH-2
GND
VTR
GND
RP Extension Tool
VIDEO PB RF
CH-1
CN804/RP board

Change mode of oscilloscope from "TRIG MODE" to "NORM".

Adjustment Procedure :

(1) Playback the alignment tape.
(2) Turn the tracking control potentiometer on the front panel to the ⌈FIXED⌋ position.
(3) Turn the AC adjustment screw until the positions of the CTL waveform and RF waveform meet the specification 1. (Fig. 1 and Fig. 2)
(4) Change the connection to the oscilloscope as follows.
TRIG : SW'ING PULSE terminal/RP extension tool
(5) Turn the AC adjustment screw until the center of the RF waveform is the maximum level. Confirm that the RF waveform meet the specification 2. (Fig. 3)
(6) Turn the tracking control potentiometer on the front panel left and right, and confirm that the center of the RF waveform is the maximum level when the potentiometer is at the ⌈FIXED⌋ position. (specification 3)

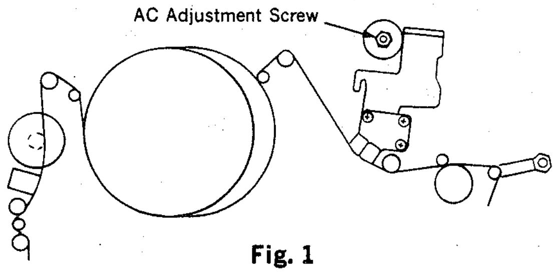

AC Adjustment Screw

Fig. 1

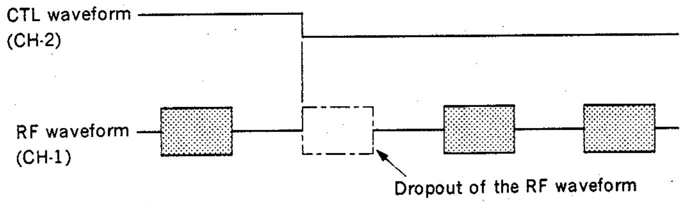
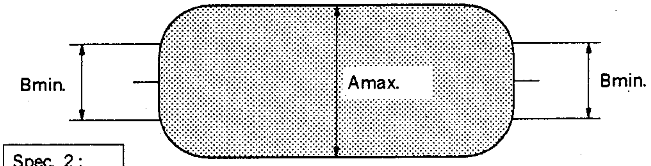

CTL waveform
(CH-2)
RF waveform
(CH-1)
Dropout of the RF waveform

Fig. 2

Spec. 1 :
The point where the RF waveform has dropout must coincide with the falling edge of the CTL waveform.
If the RF waveform dropout point has shifted to the right at the CTL datum....Turn the AC adjustment screw counterclockwise.
If the RF waveform dropout point has shifted to the left at the CTL datum....Turn the AC adjustment screw clockwise.


Bmin.
Amax.
Bmin.

Spec. 2 :
$\frac{Bmin.}{Amax.} \geqq 0.8$

Fig. 3

Spec. 3 :
The center part of the RF waveform must be the maximum level when the tracking control potentiometer is at the ⌈FIXED⌋ position.

6-13. SWITCHING POSITION ADJUSTMENT

Tools :
Oscilloscope
RP extension tool (J-6381-370A)
Alignment tape, JVC-MH-2

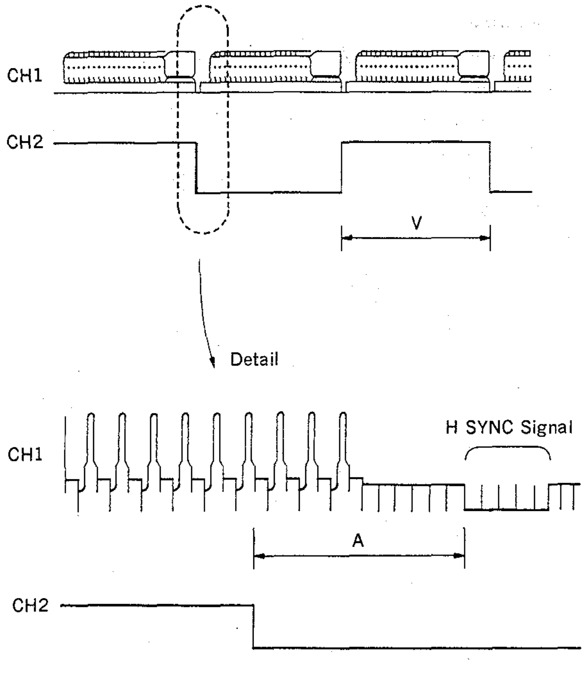
Adjustment Procedure :

(1) Connect the oscilloscope as follows.
CH-1 : TP304/VO-37 board (D-2)
GND : GND terminal/RP extension tool
CH-2 : SW'ING PULSE terminal/RP extension tool
TRIG : CH-2
GND : GND terminal/RP extension tool

(2) Playback the color bar part of the alignment tape.

(3) Set the tracking control potentiometer on the front panel to the 「FIXED」 position.

(4) Turn RV102 (D-9) on the SS-49 board until the specification is satisfied.



Spec. :
A=6.5±0.5H
(416±32μsec)

6-14. TAPE RUNNING CHECK (FF, REW MODE)

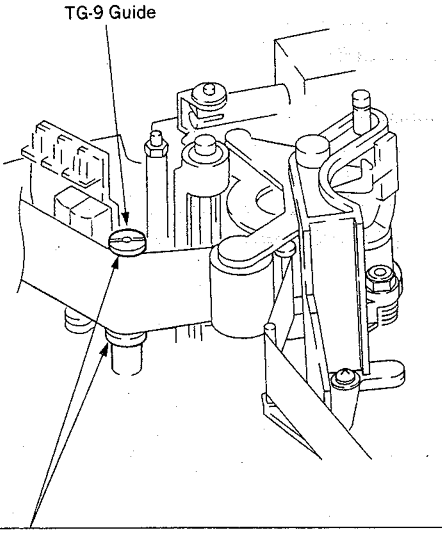
Tool:
S-VHS cassette tape, T-160

Checking Procedure:

(1) Insert the cassette tape (T-160) into this unit.
(2) Press the FF button.
(3) Confirm that the tape travels without riding up on the upper or lower flange of the TG-9 guide for about 15 seconds after this unit goes into the FF mode.
(4) Press the REW button.
(5) Confirm that the tape travels without riding up on the upper or lower flange of the TG-9 guide for about 15 seconds after this unit goes into the REW mode.

If specification is not satisfied:

(6) Re-adjust the RVS guide height according to sub-section 6-7.
(7) Check steps (2) to (5).
(8) After tape run adjustment has been completed, apply locking compound to the AC adjustment screw, and also the audio head azimuth and zenith adjustment screw. (Fig. 2)



Spec.:
The tape must not ride up on the upper or lower flange.

Fig. 1

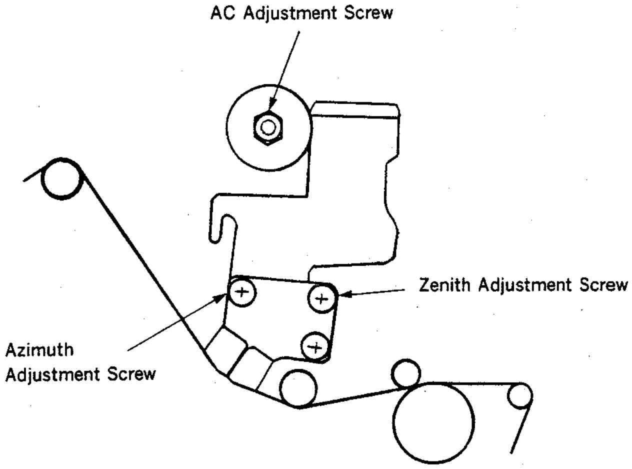


Fig. 2

SECTION 7
GENERAL INFORMATION FOR ELECTRICAL ALIGNMENTS

7-1. ADJUSTMENT COMPONENT INDEX

AU-179C board		**Page**
RV1	AFM SWITCHING POSITION FOR 4.43NTSC	9-2
RV2	AFM PB RF LEVEL	9-3
RV4	CH-1 AFM PB LEVEL	9-3
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RV482	S-Y OUTPUT LEVEL	10-2

7-2. EQUIPMENT REQUIRED

It is recommended to use either the equipment described below or equivalents as measure equipment and signal generator.

[Measure Equipment]
- Oscilloscope (TEKTRONIX 2445B/150 MHz or more)
- Waveform Monitor/Vector Scope (TEKTRONIX 1751A)
- Audio Level Meter (HEWLETT PACKARD HP3400)
- Frequency Counter (ADVANTEST TR5821AK)
- Digital Voltmeter
- Color Monitor (SONY PVM Series with H-V Delay)

[Signal Generator]
- Multiformat Signal Generator (TEKTRONIX TSG-131 with S-VIDEO OUT)
- Audio Signal Generator (HEWLETT PACKARD HP8904)

[Tool]
- RP Extension Tool (SONY Part No. J-6381-370-A)
- Special Connector Cable (Refer to "7-5. Before Starting to Align the Video System" on page 7-4.)
- S-VHS Video cassette Recorder (SONY SVO-9620 or SVO-9500MDP)
- Alignment Tape
  <NTSC>
    KRV-35NF (SONY Part No. 8-192-603-51)
    KRV-51HN (SONY Part No. 8-192-605-21)
  <PAL>
    KRV-39PF (SONY Part No. 8-192-603-96)
    KRV-45PS (N-VHS) (SONY Part No. pending)
    KRV-45HPS (S-VHS) (SONY Part No. pending)
- Blank Tape
  S-VHS Tape

<Note> See SECTION 6. TAPE RUN ALIGNMENTS (page 6-3) for how to use the RP extension tool.

7-3. ELECTRICAL ADJUSTMENT ASSOCIATED WITH REPLACEMENT OF MECHANICAL PARTS

7-3-1. Adjustment for Drum Ass'y or Upper Drum Ass'y Replacement

9-2. AFM PB RF Level Adjustment
10-25. PB Y RF Level Adjustment (Using SG)
11-23. PB Y RF Level Adjustment (Using Alignment Tape)

7-3-2. Adjustment for Audio Head Ass'y Replacement

9-4. LAU PB Level Adjustment
9-5. LAU PB Frequency Response Adjustment

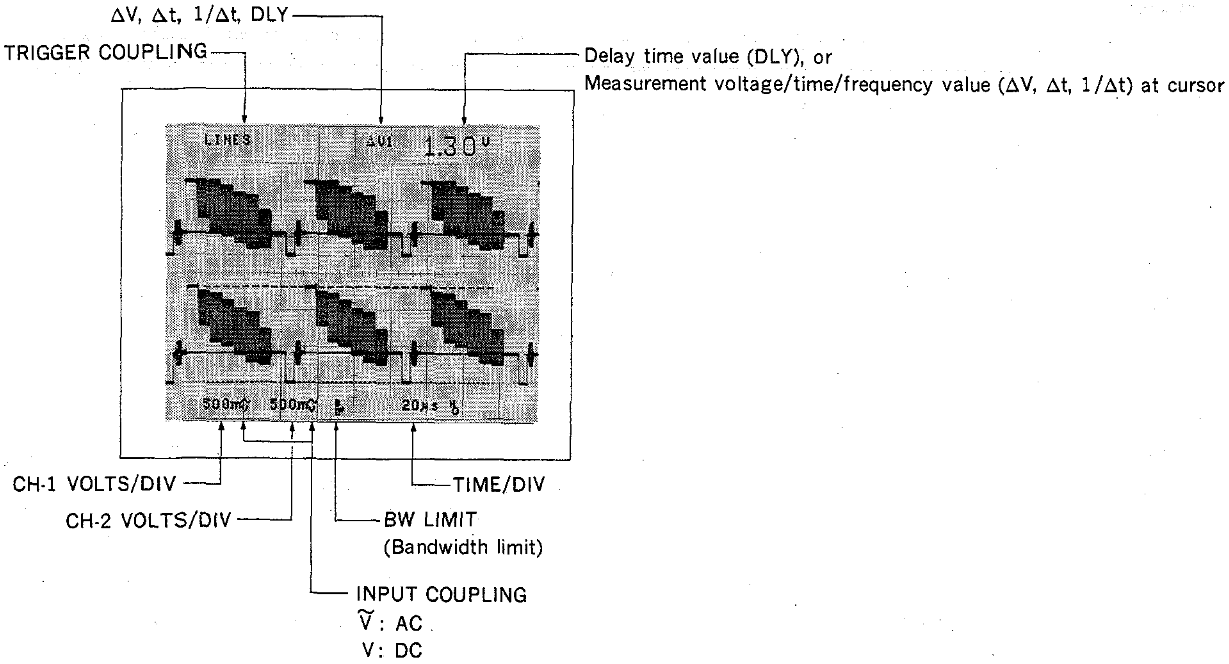
7-3-3. Adjustment for Capstan Motor (SCV-0401A) Replacement

8-2. Capstan FG (B) Duty Rate Adjustment
8-3. Capstan FG (A) Duty Rate Adjustment
8-4. Stop Servo Adjustment

7-4. SETTING OF EQUIPMENT REQUIRED

Oscilloscope

- With waveform photograph used for waveform display:
  The setting conditions are displayed on the photograph as follows.

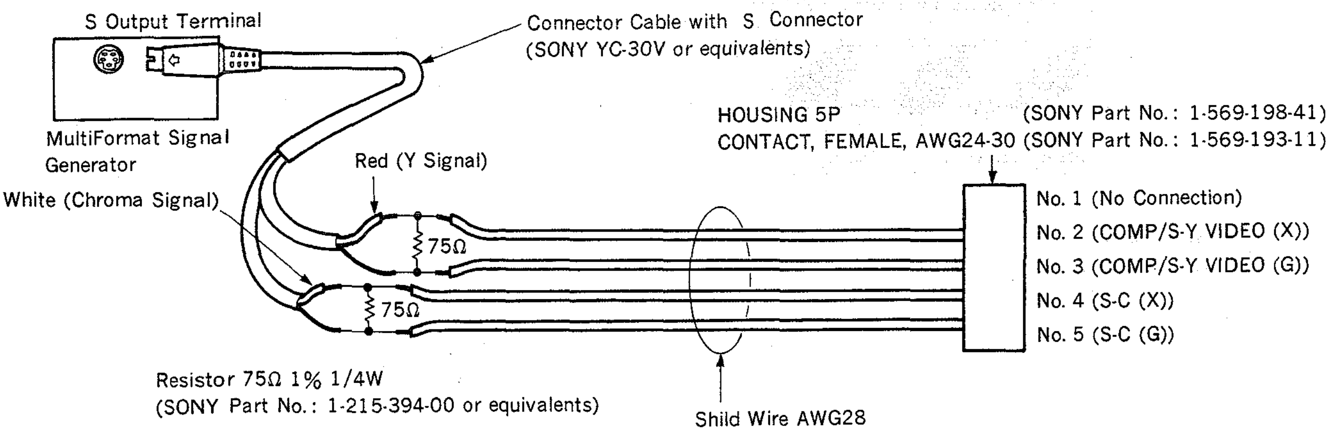

ΔV, Δt, 1/Δt, DLY
TRIGGER COUPLING
Delay time value (DLY), or
Measurement voltage/time/frequency value (ΔV, Δt, 1/Δt) at cursor
LINES
ΔV1
1.30V
500mV
500mV
20μs
CH-1 VOLTS/DIV
CH-2 VOLTS/DIV
TIME/DIV
BW LIMIT
(Bandwidth limit)
INPUT COUPLING
Ṽ : AC
V : DC

7-5. BEFORE STARTING TO ALIGN THE VIDEO SYSTEM

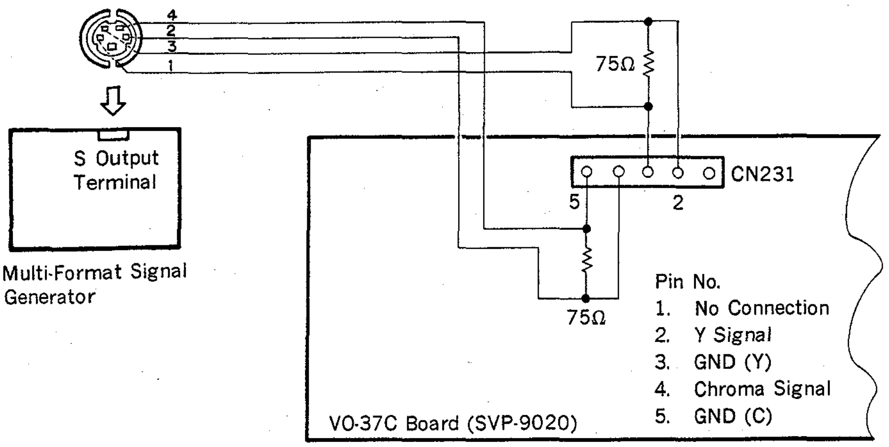
1) Section 10 describes how to align the video signal system with a multi-format signal generator. Section 11 describes how to align the video signal system with an alignment tape. As a rule, follow the instructions in section 10 (using a multi-format signal generator). Section 11 (using an alignment tape) does not perform the S VIDEO OUT Y LEVEL adjustment.

2) The following describes how to connect for the video signal system alignment (Section 10) with a multi-format signal generator.
   - Connect the output signal from the multi-format signal generator to VO-37C board connector CN231 (pin-2: Y signal, pin-4: chroma signal) as the input. The output signal from the multi-format signal generator should have a terminal impedance of 75Ω. Fabricate the special connector cable locally as follows.
   - Connect between pin 7 of CN203 (H-6) and GND (pin 1 of CN201/K-6) on the VO-37C board. (Cancel the Video Mute Signal.) After the adjustment, remove the connection. (Refer to on page 10-15.)

[Special Connector Cable]


S Output Terminal
Connector Cable with S Connector
(SONY YC-30V or equivalents)
MultiFormat Signal Generator
HOUSING 5P (SONY Part No.: 1-569-198-41)
CONTACT, FEMALE, AWG24-30 (SONY Part No.: 1-569-193-11)
Red (Y Signal)
White (Chroma Signal)
75Ω
75Ω
No. 1 (No Connection)
No. 2 (COMP/S-Y VIDEO (X))
No. 3 (COMP/S-Y VIDEO (G))
No. 4 (S-C (X))
No. 5 (S-C (G))
Resistor 75Ω 1% 1/4W
(SONY Part No.: 1-215-394-00 or equivalents)
Shild Wire AWG28

[Connection of the Multi-Format Signal]


4
2
3
1
S Output Terminal
Multi-Format Signal Generator
75Ω
CN231
5
2
75Ω
Pin No.
1. No Connection
2. Y Signal
3. GND (Y)
4. Chroma Signal
5. GND (C)
VO-37C Board (SVP-9020)

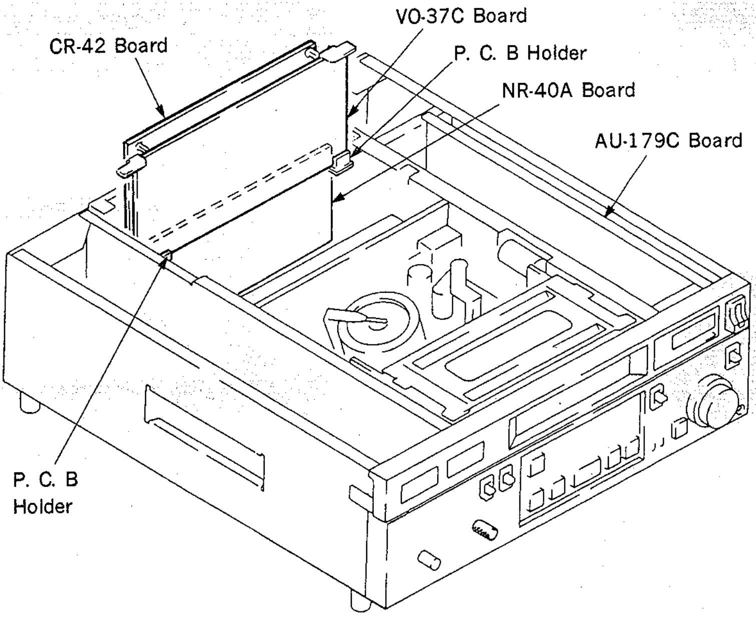
3) The default values for the following circuits were set to OFF by menu operation before dispatch from the factory; the digital noise reduction circuit, digital chroma noise reduction circuit, digital luminance noise reduction circuit and digital luminance enhancer circuit. These circuits are only needed when the optional SVBK-150 is installed.
   Before aligning the video signal system with SVBK-150 installed, confirm that these default values are set OFF.
   Refer to "Summary of menu items and their function" and "Setting menu operation" in section 1.

7-6. PREPARING FOR ALIGNMENT

- Aligning the video system requires the following preparations to get access to the VO-37C board and CR-42 board or NR-40A board.

1) Remove the two screws securing the top panel. Remove the top panel.
2) Remove the two screws securing the VO-37C board and CR-42 board (or NR-40A board) to the bracket.
3) Place the VO-37C (or NR-40A board) board against the printed circuit board holder.

Repeat the above procedure for the NR-40A board.



- Aligning the audio system requires the following preparations so get access to the AU-179C board.

1) Remove the two screws securing the top panel. Remove the top panel.
2) Remove the two screws securing the AU-179C board. Remove the AU-179C board from the main unit.
3) Place an insulation sheet between the AU-179C board and the main unit. Place the A side of AU-179C board upward. Be sure that the B side of the AU-179C board is insulated.

- Aligning the system control and servo system requires the following preparations so get access to the SS-49E board.

BACK-UP VOLTAGE ADJUSTMENT

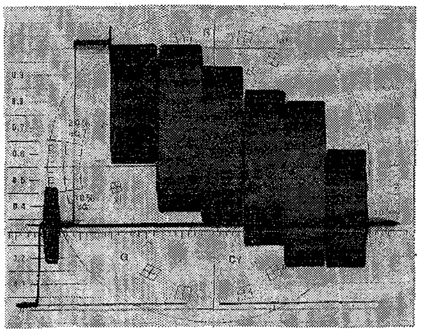
1) Remove the four screws securing the bottom panel and remove the bottom panel.

CAPSTAN FG DUTY RATE and STOP SERVO ADJUSTMENT

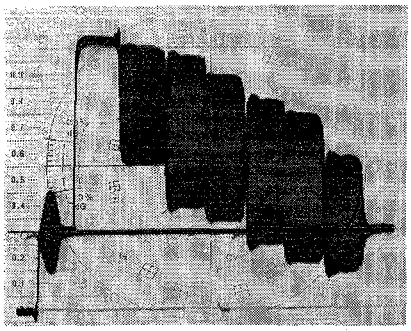
1) Remove the two screws securing the top panel and remove the top panel.

7-7. TEST SIGNAL FOR VIDEO SYSTEM

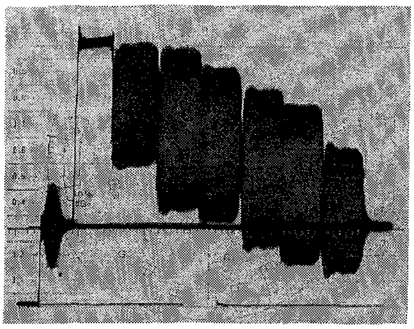
1. EBU COLOR BARS (100/0/75/0)



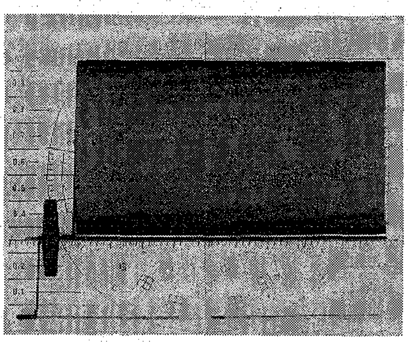
2. KRV-45HPS



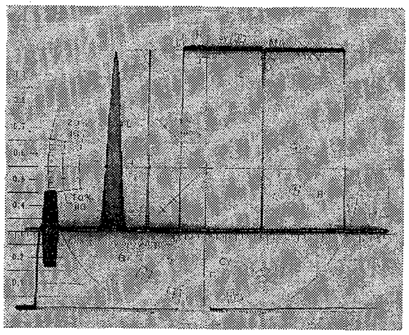
3. KRV-45PS



4. CHROMA NOISE



5. PULSE & BAR



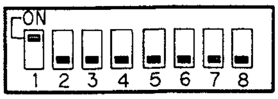
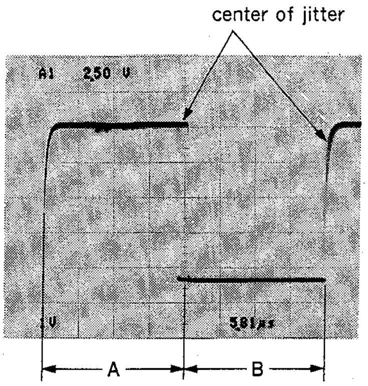
SECTION 8
SYSTEM CONTROL AND SERVO SYSTEM ALIGNMENTS

[Equipment Required]
- Digital voltmeter
- Oscilloscope
- S-VHS blank tape

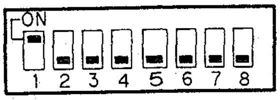
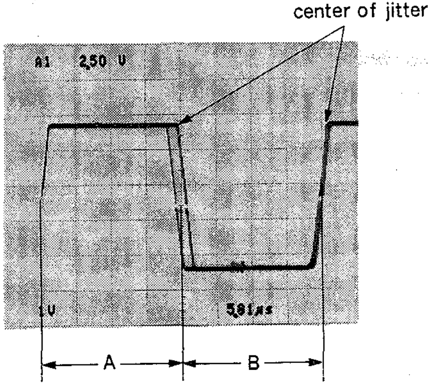
8-1. BACK-UP VOLTAGE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect TP101/SS-49E (K-2) to E3/SS-49E (H-4) with a 100 ohms resistor. • POWER : ON • Connect the digital voltmeter to test point (TP). • After the adjustment, remove the resistor.	TP101/SS-49E (K-2) $5.4^{+0}_{-0.1}$ V dc	⊘RV101/SS-49E (L-1)

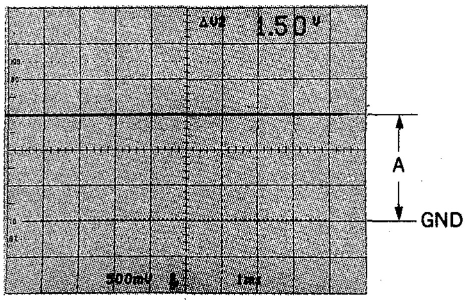
8-2. CAPSTAN FG (B) DUTY RATE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49E (H-9) No.1 : ON  S101 • Insert a S-VHS blank tape. • SEARCH×10 mode (Push the SEARCH button, and rotate fully the shuttle dial clockwise.) • Connect the oscilloscope to test point (TP). • After the adjustment, set the S101 (No.1) to OFF.	TP103 (CN2)/SS-49E (K-9)  A=B (DUTY RATE 50%)	⊘RV503/SS-49E (J-9)

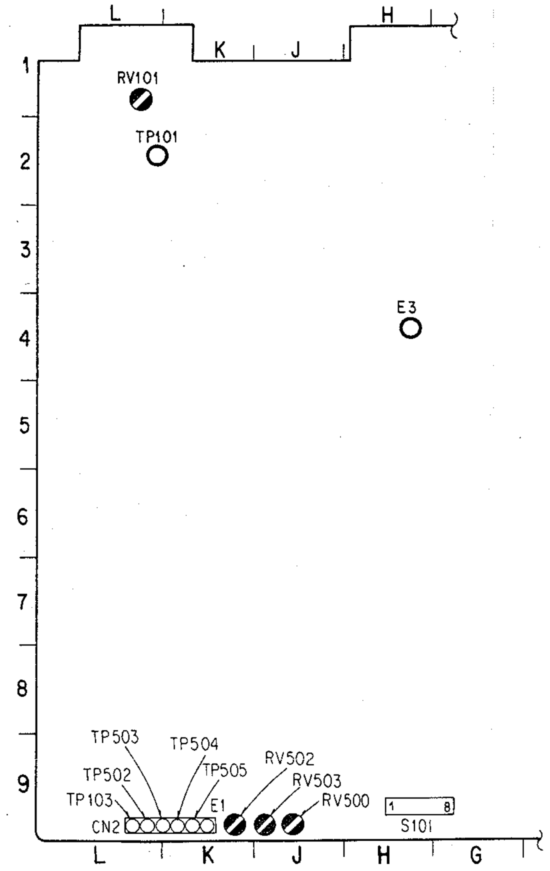
8-3. CAPSTAN FG (A) DUTY RATE ADJUSTMENT

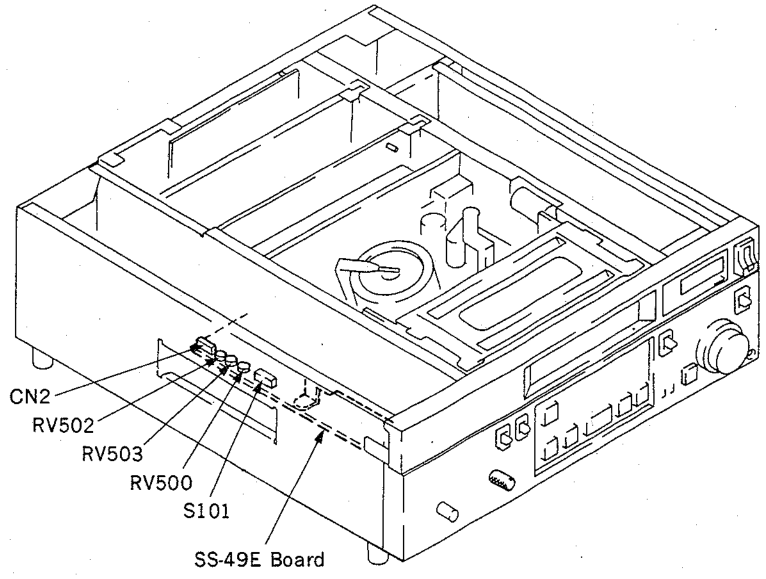
Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49E (H-9) No.1 : ON  S101 • Insert a S-VHS blank tape. • SEARCH×10 mode (Push the SEARCH button, and rotate fully the shuttle dial clockwise.) • Connect the oscilloscope to test point (TP).	TP505 (CN2)/SS-49E (K-9)  A=B (DUTY RATE 50%)	⊘RV500/SS-49E (J-9)

8-4. STOP SERVO ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• S101/SS-49E (H-9) No.1 : ON • PAUSE mode • Connect between TP502 (CN2) /SS-49E (K-9) and TP503 (CN2) /SS-49E (K-9) with a shorting clip. • Connect the oscilloscope to test point (TP).	TP504 (CN2)/SS-49E (K-9)  A=1.5±0.1 V dc	⊘RV502/SS-49E (K-9)
• After the adjustment, set the S101 (No.1) to OFF.	• Remove the shorting clip and check that TP103 (CN2)/ SS-49E (K-9) disappear a waveform on the oscilloscope.	

Locations of CN, E, RVs, S and TPs on SS-49E board. (A side)


L
K
J
H
1
2
3
4
5
6
7
8
9
RV101
TP101
E3
TP503
TP504
TP502
TP505
TP103
RV502
RV503
RV500
E1
CN2
1
8
S101
L
K
J
H
G


CN2
RV502
RV503
RV500
S101
SS-49E Board

SECTION 9
AUDIO SYSTEM ALIGNMENTS

[Equipment Required]
- Oscilloscope
- Audio level meter
- Alignment tape

Alignment Tape Name (Part No.)	REC Mode	Contents		
		Video Area	Audio Area	Control Area
KRV-35NF 〈NTSC〉 (Part No. : 8-192-603-51)	SP	• Color bars	• Hi-Fi 400 Hz (stereo)	• CTL frequency 29.97 Hz
KRV-39PF 〈PAL〉 (Part No. : 8-192-603-96)	SP	• None	• RF	• None
KRV-45PS 〈PAL〉 (Part No. : pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 seconds, 400 Hz 15 seconds (alternately) • Hi-Fi audio 170 min 400 Hz (stereo)	• CTL frequency 25 Hz

[Setting of switch]

FRONT PANEL
- CTL/MENU switch ....CTL

SUB PANEL
- DOLBY NR switch ....OFF
- SYSTEM SELECT switch ....PAL

KEY PANEL
- PROGRAM switch ....OFF
- TIMER switch ....OFF
- TRACKING VR ....FIXED

[Presetting of Adjustment RVs (Variable Resistor)]

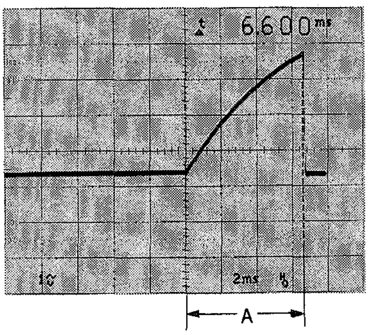
Serial No. 10001—10030

(1) Turn the RV5/AU-179C (D-1) to the mechanical center position.
(2) Turn the RV9/AU-179C (D-2) to the mechanical center position.

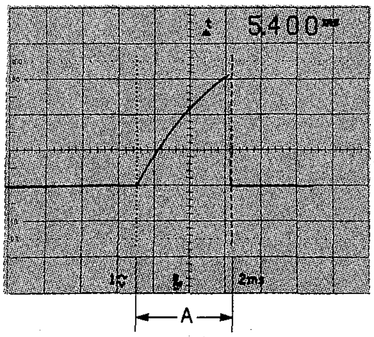
[Note]
- 0 dBu=0.775 Vrms

9-1. AFM SWITCHING POSITION ADJUSTMENT

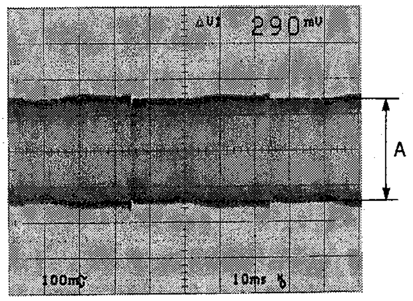
Step 1 〈PAL〉

Machine condition for adjustment	Specifications	Adjustments
• SYSTEM SELECT switch: PAL • Connect the oscilloscope to test point (TP). • Play back the alignment tape KRV-45PS.	TP3/AU-179C (A-3)  A=6.6±0.2 ms	RV10/AU-179C (A-3)

Step 2 〈4.43 NTSC〉

Machine condition for adjustment	Specifications	Adjustments
• SYSTEM SELECT switch : 4.43 NTSC • Connect the oscilloscope to test point (TP). • Play back the alignment tape KRV-35NF. • After the adjustment, set the SYSTEM SELECT switch to PAL.	TP3/AU-179C (A-3)  A=5.4±0.2 ms	RV1/AU-179C (A-3)

9-2. AFM PB RF LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Tracking VR: Center Click (FIXED) • Connect the oscilloscope to test point (TP). • Play back the alignment tape KRV-39PF.	TP5/AU-179C (A-2)  A=300±10 mV p-p	⊘RV2/AU-179C (A-2) Trigger: TP3/AU-179C (A-3)

9-3. AFM PB LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE OUT SELECT switch : Hi-Fi • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi). • Play back the alignment tape KRV-45PS.	CH-1: AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.3 dBu	⊘CH-1: RV4/AU-179C (B-2) ⊘CH-2: RV8/AU-179C (B-3)

9-4. LAU PB LEVEL ADJUSTMENT

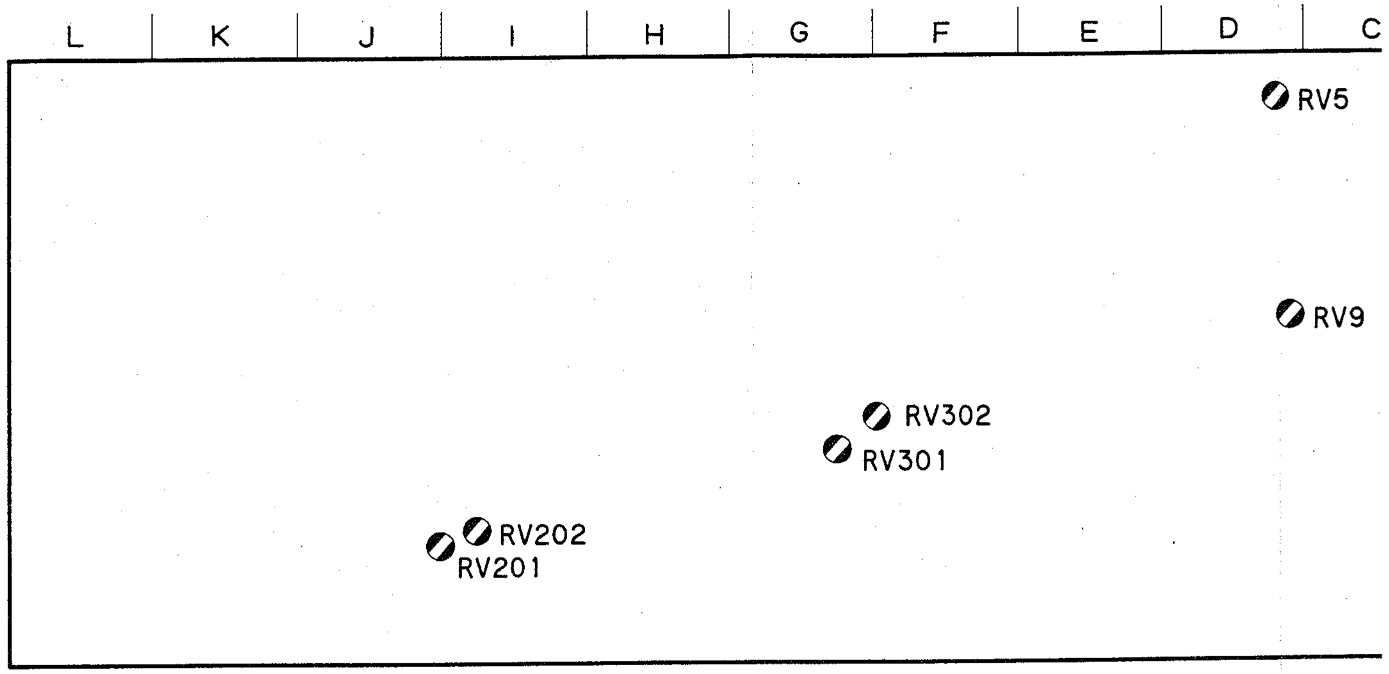
Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE OUT SELECT switch : NORMAL • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi). • Play back the Normal Audio 400 Hz portion of the alignment tape KRV-45PS.	CH-1: AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ) −6.0±0.3 dBu	⊘CH-1: RV202/AU-179C (I-4) ⊘CH-2: RV302/AU-179C (F-3)

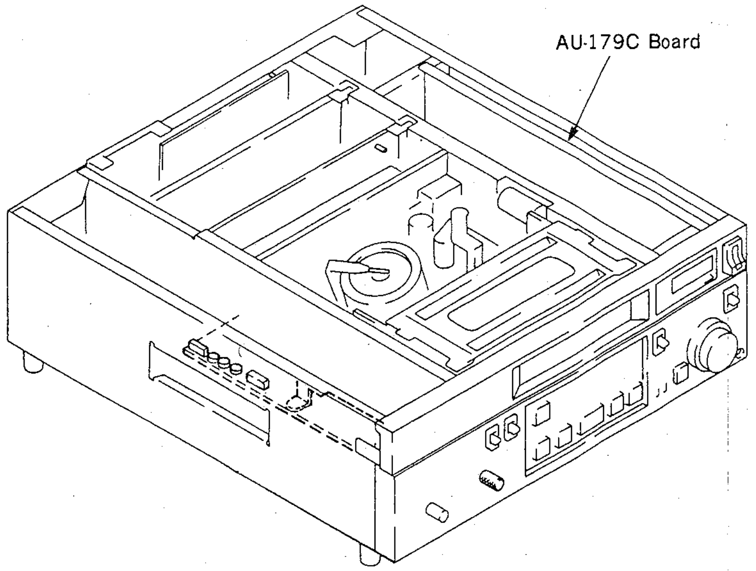
9-5. LAU PB FREQUENCY RESPONSE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• AUDIO LINE OUT SELECT switch : NORMAL • Connect the audio level meter to AUDIO OUT (NORM/Hi-Fi). • Play back the Normal Audio 400 Hz and 7 kHz portion of the alignment tape KRV-45PS.	CH-1: AUDIO OUT (NORM/Hi-Fi) CH-1/L (terminated with 47 kΩ) CH-2: AUDIO OUT (NORM/Hi-Fi) CH-2/R (terminated with 47 kΩ)	⊘CH-1: RV201/AU-179C (I-4) ⊘CH-2: RV301/AU-179C (G-3)

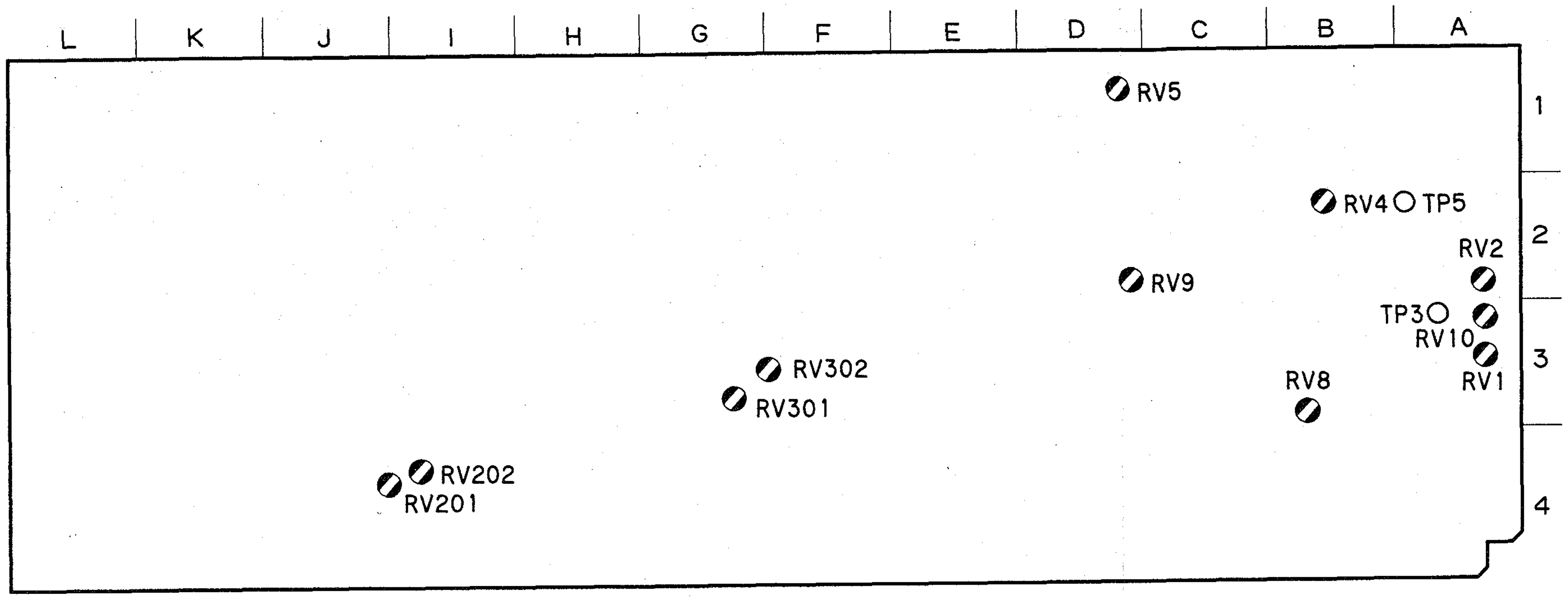
Frequency	Level
400 Hz	Reference
7 kHz	Reference±0.5 dB

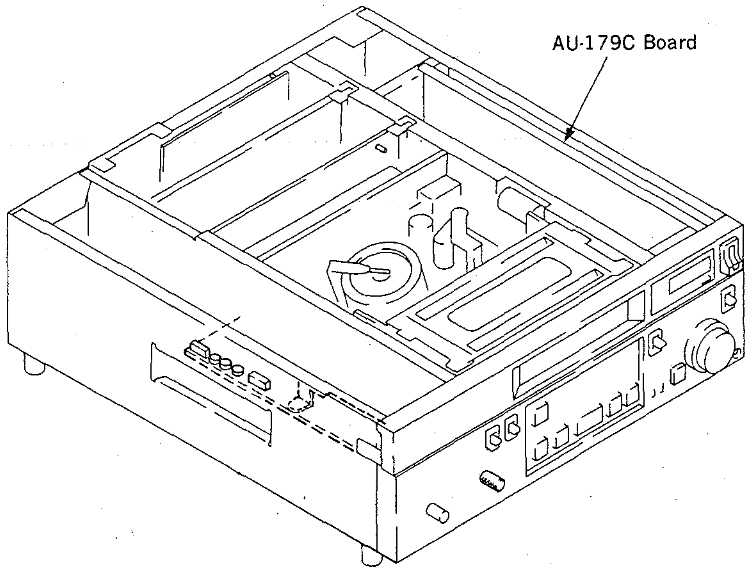
Locations of RVs and TPs on AU-179C board. (A side)





Locations of RVs and TPs on AU-179C board. (A side)


L
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
RV5
RV4
TP5
RV2
RV9
TP3
RV10
RV1
RV8
RV302
RV301
RV202
RV201


AU-179C Board

SECTION 10
VIDEO SYSTEM ALIGNMENTS USING THE SIGNAL GENERATOR

[Equipment Required]

- Oscilloscope
- Frequency Counter
- Multiformat Signal Generator (with S-VIDEO OUT)
- Waveform Monitor/Vector Scope
- Color Monitor (with H-V Delay)
- S-VHS Video Cassette Recorder (SONY SVO-9620 or SVO-9500MDP)
- Special Connector Cable
  (Refer to "7-5. Before Starting to Align the Video Signal" on page7-4.)
- RP Extension Tool (Refer to "RP extension tool" on page 6-3.)
- Blank Tape (Super-VHS)
- Alignment Tape

Alignment Tape Name (Part No.)	REC Mode	Contents		
		Video Area	Audio Area	Control Area
<NTSC> KRV-51HN (Super-VHS) (Part No.: 8-192-605-21)	SP	• Color bars 5 min.	No signal	• CTL frequency 29.97 Hz
	EP	• Color bars 5 min.	No signal	
<PAL> KRV-45PS (Normal-VHS) (Part No.: pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 seconds, 400 Hz 15 seconds (alternately) • HiFi audio 170 min 400 Hz (stereo)	• CTL frequency 25 Hz
<PAL> KRV-45HPS (Super-VHS) (Part No.: pending)				

[Setting of switch]

FRONT PANEL
- CTL/MENU switch……………………………………CTL

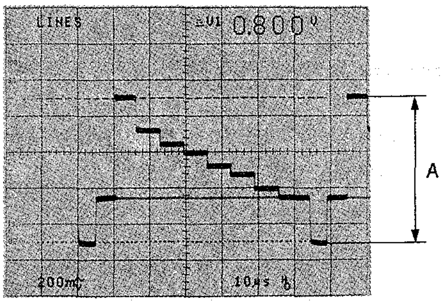
SUB PANEL
- EDIT switch…………………………………………OFF
- SYSTEM SELECT switch ……………………………PAL

KEY PANEL
- PROGRAM switch ……………………………………OFF
- TIMER switch …………………………………………OFF
- TRACKING Control VR ………………………………FIXED

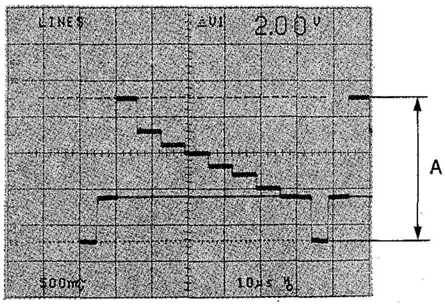
[NOTE]

- Connect between pin 7 of CN203 (H-6) and GND (pin 1 of CN201/K-6) on the VO-37C board. (Cancel the Video Mute Signal.) After the adjustment, remove the connection. (Refer to on page 10-13.)

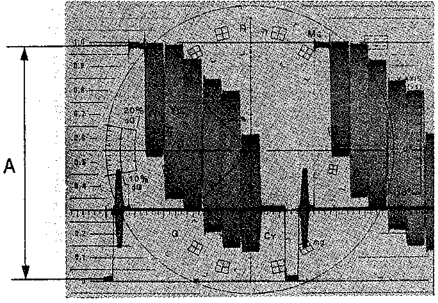
10-1. Y AGC LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CN231/VO-37C (F-1) : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP303/VO-37C (D-4)  A=0.80±0.05 V p-p	⊘RV101/VO-37C (K-4) Trigger : TP301/VO-37C (C-5)

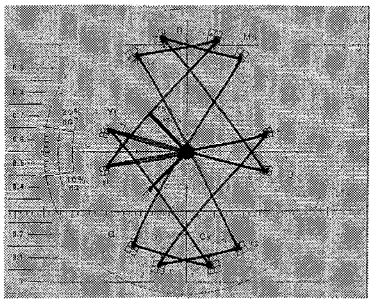
10-2. S VIDEO OUT Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CN231/VO-37C (F-1) : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect the oscilloscope to test points (TPs).	TP492/VO-37C (G-1)  A=2.0±0.1 V p-p	⊘RV482/VO-37C (G-2) Trigger : TP301/VO-37C (C-5)

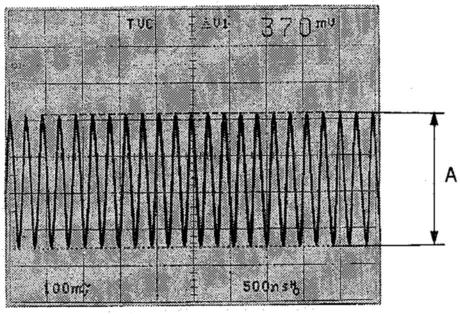
10-3. VIDEO OUT MIX Y LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• CN231/VO-37C (F-1) : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode Waveform Monitor/Vector Scope • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV480/VO-37C (G-4)

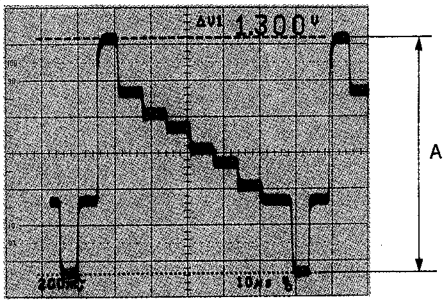
10-4. VIDEO OUT MIX CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
• CN231/VO-37C (F-1) : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode Waveform Monitor/Vector Scope • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  • The luminous spot of burst shall be at 75% position on mark. • One and more luminous spots shall within the frame of each ⊞ mark.	⊘RV481/VO-37C (G-3)

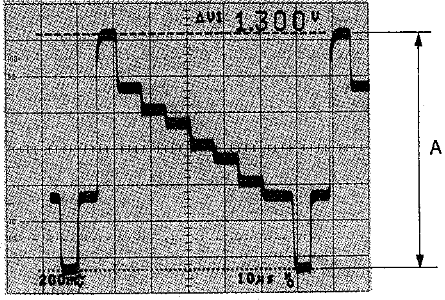
10-5. PB FSC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the frequency counter through the oscilloscope to test point (TP).	TP602/CR-42 (H-1)  4.433619±0.000020 MHz (A≧300 mV p-p)	⊘CV601/CR-42 (F-1) Trigger : INT

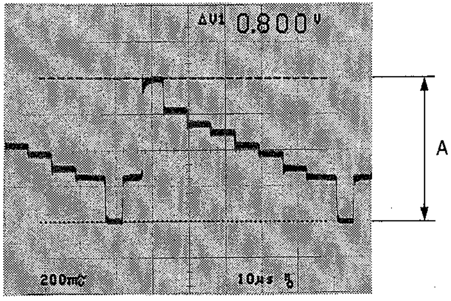
10-6. N-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37C (A-5)  A=1.30±0.05 V p-p	⊘RV106/VO-37C (J-2) Trigger : TP301/VO-37C (C-5)

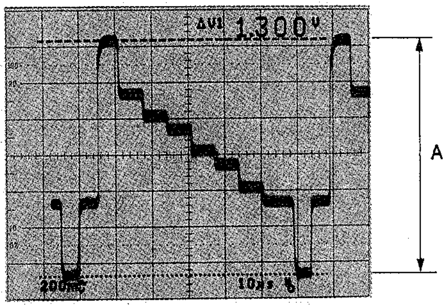
10-7. S-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37C (A-5)  A=1.30±0.05 V p-p	⊘RV105/VO-37C (H-1) Trigger : TP301/VO-37C (C-5)

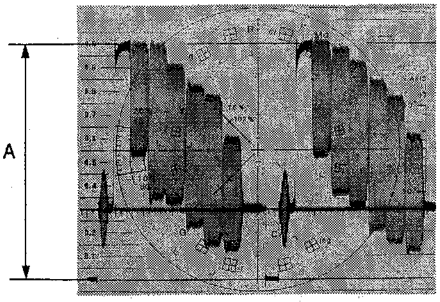
10-8. COMPOSITE IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP303/VO-37C (D-3)  A=0.80±0.05 V p-p	⊘RV310/VO-37C (B-1) Trigger : TP301/VO-37C (C-5)

10-9. NR IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP304/VO-37C (D-2)  A=1.30±0.05 V p-p	⊘RV30/VO-37C (D-2) Trigger : TP301/VO-37C (C-5)

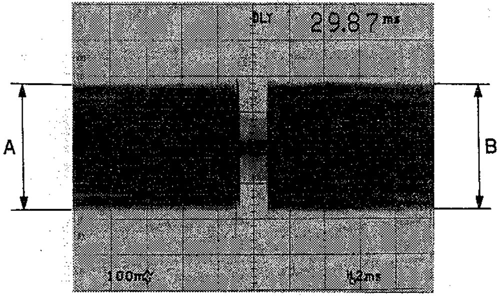
10-10. NR OUT Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV402/VO-37C (E-3)

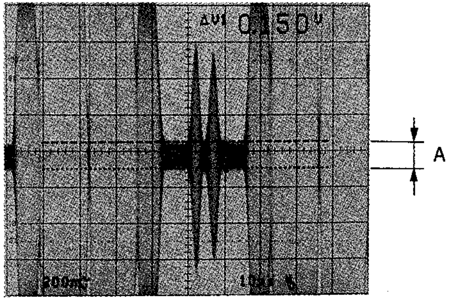
10-11. 320 FH FREE RUN ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Turn the power switch OFF and then turn ON again. • Connect the frequency counter through the oscilloscope to test point (TP). • Insert a S-VHS blank tape. • STOP (E-E) mode	TP608/CR-42 (F-2) 5.060±0.003 MHz	⊘RV602/CR-42 (G-2)

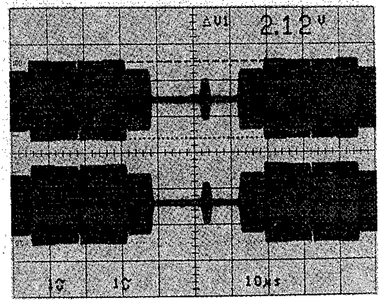
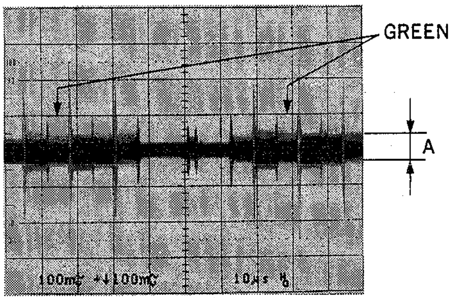
10-12. PB CHROMA RF LEVEL BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Tracking Control VR : Maximize the A and B level. • Connect the oscilloscope to test point (TP) and connector pin. • After the adjustment, set the tracking VR to center click (FIXED).	TP601/CR-42 (G-3)  $\frac{B}{A}=100\pm5\%$ (A is reference level.)	⊘RV606/CR-42 (E-3) Trigger: CN804-5/RP-62E (C-1) (RP extension tool: SW'ING PULSE terminal)

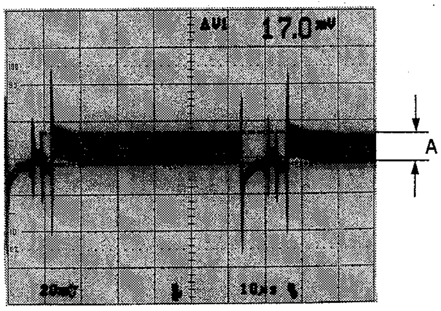
10-13. CONVERTER BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP501/CR-42 (C-3)  Minimize the A level. (A≦0.2 V)	⊘RV603/CR-42 (E-3) Trigger : TP302/VO-37C (A-5)

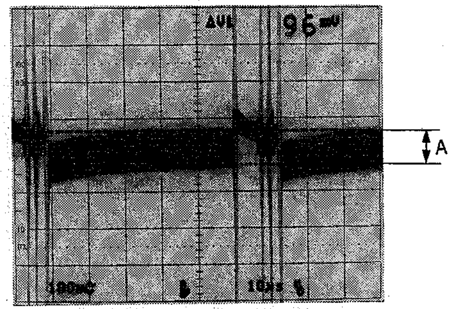
10-14. CROSSTALK CANCELLER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• CN231/VO-37C (F-1) : COLOR BARS signal (WHITE 100%, AMPL 75%) • Insert a S-VHS blank tape. • STOP (E-E) mode. • Connect the oscilloscope to test points (TPs). Oscilloscope • ADD • CH-2 : INV	CH-1 : TP501/CR-42 (C-3) CH-2 : TP502/CR-42 (A-4)   Minimize the A level. (A is green level)	⊘RV501/CR-42 (C-4) ⊘RV502/CR-42 (B-4) • Adjust alternately. Trigger : TP301/VO-37C (C-5)

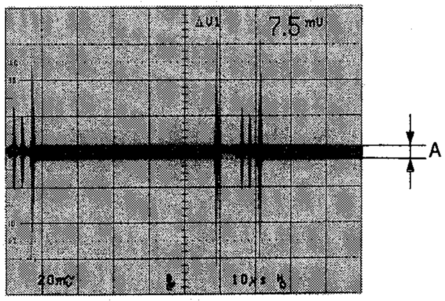
10-15. CPI ADJUSTMENT (1)

Machine condition for adjustment	Specifications	Adjustments
• CN231/VO-37C (F-1) : CHROMA NOISE signal • Insert a S-VHS blank tape. • STOP (E-E) mode • EDIT switch: ON • Connect the oscilloscope to test points (TPs).	TP801/CR-42 (D-1)  Minimize the A level. (A≦20 mV)	⊘CV801/CR-42 (D-2) ⊘RV801/CR-42 (D-2) • Adjust alternately. Trigger : TP301/VO-37C (C-5)

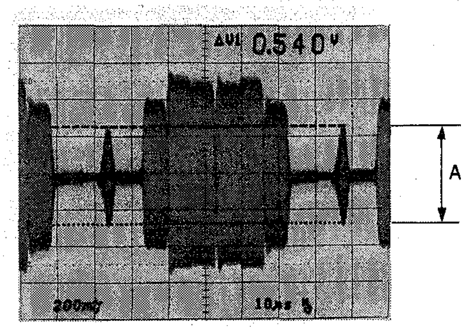
10-16. CPI ADJUSTMENT (2)

Machine condition for adjustment	**Specifications**	**Adjustments**
• CN231/VO-37C (F-1) : CHROMA NOISE signal • Insert a S-VHS blank tape. • STOP (E-E) mode • EDIT switch : ON • Connect the oscilloscope to test points (TPs).	TP820/CR-42 (A-1)  Minimize the A level. (A≦100 mV)	⊘CV800/CR-42 (D-2) ⊘RV800/CR-42 (E-2) • Adjust alternately. Trigger : TP301/VO-37C (C-5)

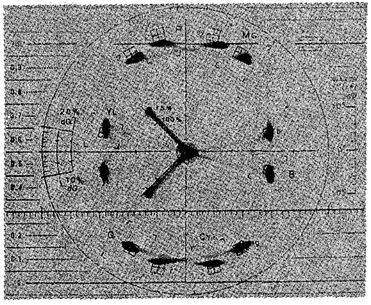
10-17. CPI ADJUSTMENT (3)

Machine condition for adjustment	**Specifications**	**Adjustments**
• CN231/VO-37C (F-1) : CHROMA NOISE signal • Insert a S-VHS blank tape. • STOP (E-E) mode • Connect between TP850/CR-42 (B-1) and TP851/CR-42 (B-1) on the CR-42 board with shorting clip. • EDIT switch : ON • Connect the oscilloscope to test points (TPs). • After the adjustment, remove the shorting clip and set the EDIT switch to OFF.	TP870/CR-42 (C-1)  Minimize the A level. (A≦10 mV)	⊘CV802/CR-42 (C-2) ⊘RV802/CR-42 (C-2) • Adjust alternately. Trigger : TP301/VO-37C (C-5)

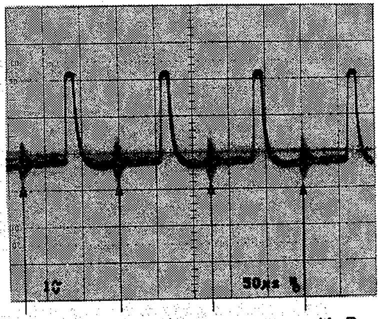
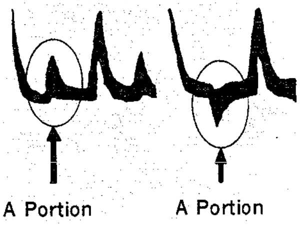
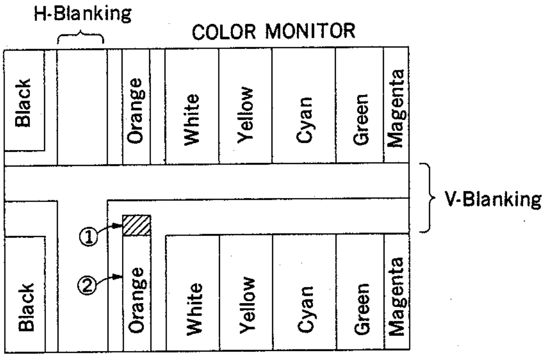
10-18. NR IN CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP890/CR-42 (E-1)  A=0.54±0.02 Vp-p	⊘RV860/CR-42 (D-1) Trigger: TP301/VO-37C (C-5)

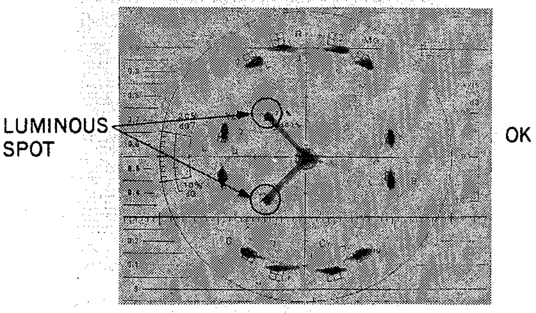
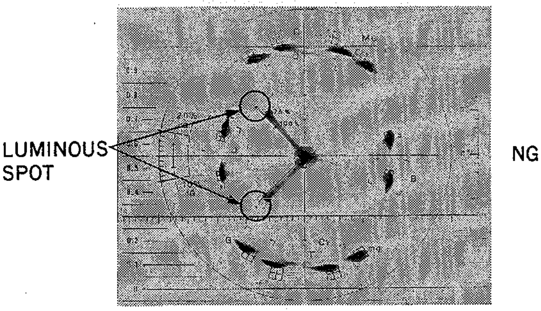
10-19. NR OUT CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform/Vector monitor • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  The luminous spot of burst shall be at 75% position on mark.	⊘RV401/VO-37C (E-4)

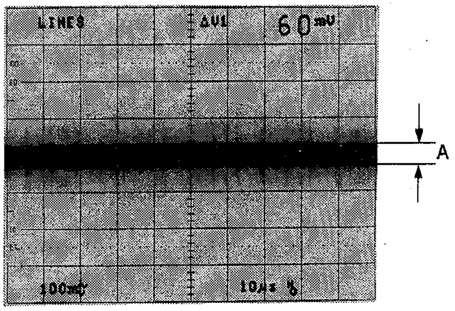
10-20. PB 135° PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
- Connect the color monitor to VIDEO OUT connector. - Connect the oscilloscope to test point (TP). - Turn the RV101/NR-40A (J-2) and RV102/NR-40A (J-2) clockwise fully. - Play back the color bars signal portion of the alignment tape KRV-45HPS.	TP106/NR-40A (H-2) OK  Phase error (A Portion) Phase error (A Portion) Phase error (A portion) is minimum. NG  A Portion A Portion VIDEO OUT connector/Rear Panel  H-Blanking COLOR MONITOR Black Orange White Yellow Cyan Green Magenta V-Blanking ① ② Black Orange White Yellow Cyan Green Magenta Check that ① portion (quasi burst) and ② portion (burst) are one and the same color (orange).	❶RV101/NR-40A (J-2)
	When the specification is not satisfied, the adjustment should be performed using RV102.	❷RV102/NR-40A (J-2)
Color Monitor - H-V DELAY: ON	If the adjustment cannot be made using RV102, change the shorting position on short land slit (SL1 and SL2) and readjust above items using the RV102.	- Short land slit SL1/NR-40A (H-3) SL2/NR-40A (H-3)

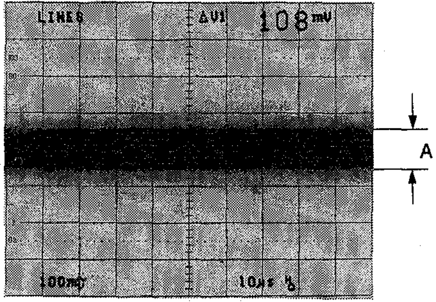
10-21. QUASI BURST LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope • VECTOR	VIDEO OUT connector (terminated with 75Ω)   The luminous spots of burst shall be at 75% position on mark. (The level of luminous spots are equal.)	⊘RV103/NR-40A (J-3)

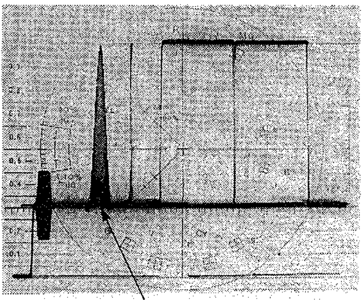
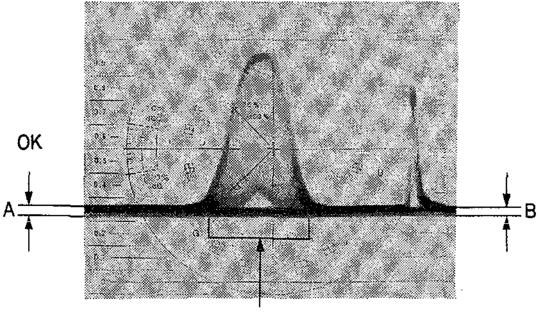
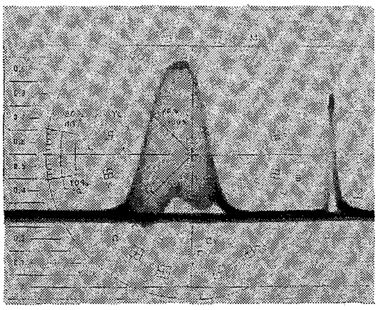
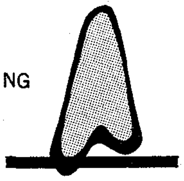
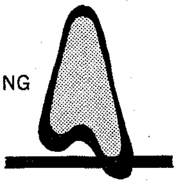
10-22. ANALOG NOISE CANCEL 2H CCD LEVEL/PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test point (TP).	TP201/NR-40A (D-4)  Minimize the A level. (A≦100 mV)	• Phase Adjustment ⊘RV202/NR-40A (E-3) • Level Adjustment ⊘RV204/NR-40A (F-3)

10-23. ANALOG NOISE CANCEL 4.43 NTSC PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• SYSTEM SELECT switch : 4.43 NTSC • Play back the color bars signal portion (SP) of the alignment tape KRV-51HN. • Connect the oscilloscope to test point (TP). • After the adjustment, set the SYSTEM SELECT switch to PAL.	TP201/NR-40A (D-4)  Minimize the A level. (A≦150 mV)	⊘ RV203/NR-40A (F-3)

10-24. PB Y/C DELAY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Record (S-VHS mode) the pulse & bar signal by a video cassette recorder (SONY SVO-9620 or SVO-9500MDP). • Play back (measurement) the pulse & bar signal portion of cassette tape by the video cassette player SVP-9020. Waveform Monitor/Vector Scope WAVEFORM • HORIZONTAL MAG: ON • GAIN X5 • UNCAL	VIDEO OUT connector (terminated with 75 Ω)  Modulation pulse OK  Bottom side portion (Modulation pulse) A=B NG  Flatten the bottom side portion (envelope) of modulation pulse. NG  Chroma Signal Delay NG  Chroma Signal Advance	⊘RV601/CR-42 (F-3)

SECTION 11
VIDEO SYSTEM ALIGNMENTS USING THE ALIGNMENT TAPE

[Equipment Required]

- Oscilloscope
- Frequency Counter
- Multiformat Signal Generator (with S-VIDEO OUT)
- Waveform Monitor/Vector Scope
- Color Monitor (with H-V Delay)
- S-VHS Video Cassette Recorder (SONY SVO-9620 or SVO-9500MDP)
- RP Extension Tool (Refer to "RP extension tool" on page 6-3.)
- Blank Tape (Super-VHS)
- Alignment Tape

Alignment Tape Name (Part No.)	REC Mode	Contents		
		Video Area	Audio Area	Control Area
⟨NTSC⟩ KRV-51HN (Super-VHS) (Part No.: 8-192-605-21)	SP	• Color bars 5 min.	No signal	• CTL frequency 29.97 Hz
	EP	• Color bars 5 min.	No signal	
⟨PAL⟩ KRV-45PS (Normal-VHS) (Part No.: pending)	SP	• Color bars 170 min	• Normal audio 7 kHz 15 seconds, 400 Hz 15 seconds (alternately) • HiFi audio 170 min 400 Hz (stereo)	• CTL frequency 25 Hz
⟨PAL⟩ KRV-45HPS (Super-VHS) (Part No.: pending)				

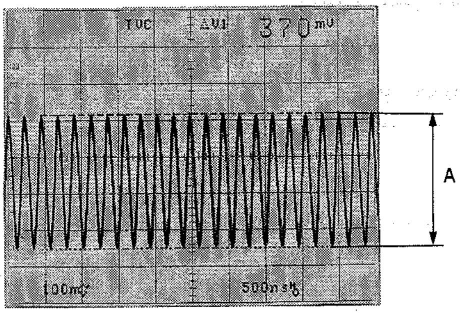
[Setting of switch]

FRONT PANEL
- CTL/MENU switch··········CTL

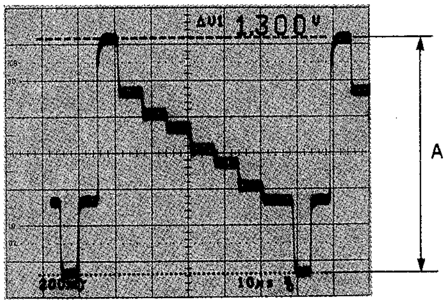
SUB PANEL
- EDIT switch··········OFF
- SYSTEM SELECT switch··········PAL

KEY PANEL
- PROGRAM switch··········OFF
- TIMER switch··········OFF
- TRACKING Control VR··········FIXED

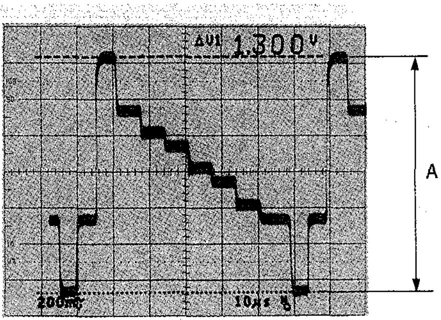
11-1. PB FSC ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the frequency counter through the oscilloscope to test point (TP).	TP602/CR-42 (H-1)  4.433619±0.000020 MHz (A≧300 mV p-p)	⊘CV601/CR-42 (F-1) Trigger : INT

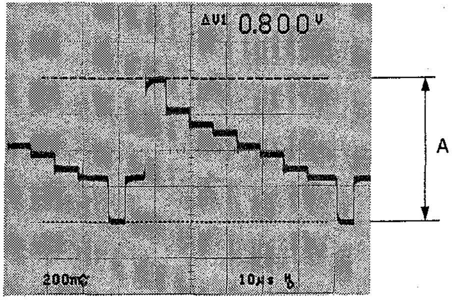
11-2. N-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37C (A-5)  A=1.30±0.05 V p-p	⊘RV106/VO-37C (J-2) Trigger : TP301/VO-37C (C-5)

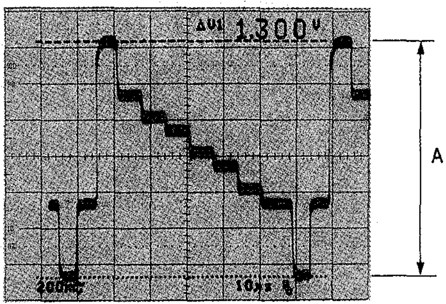
11-3. S-VHS PB DEMOD Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP302/VO-37C (A-5)  A=1.30±0.05 V p-p	⊘RV105/VO-37C (H-1) Trigger : TP301/VO-37C (C-5)

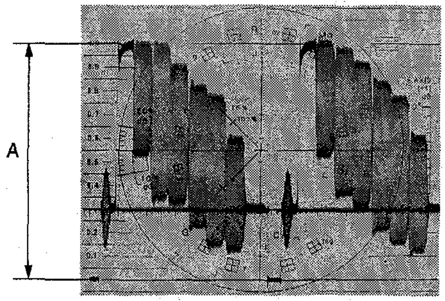
11-4. COMPOSITE IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP303/VO-37C (D-3)  A=0.80±0.05 V p-p	⊘RV310/VO-37C (B-1) Trigger : TP301/VO-37C (C-5)

11-5. NR IN Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP304/VO-37C (D-2)  A=1.30±0.05 V p-p	⊘RV30/VO-37C (D-2) Trigger : TP301/VO-37C (C-5)

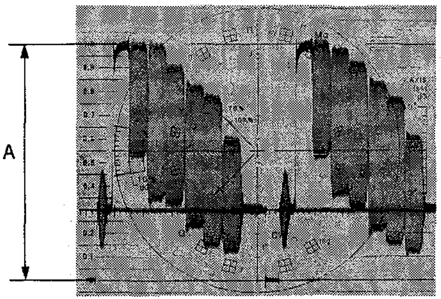
11-6. NR OUT Y LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope • WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV402/VO-37C (E-3)

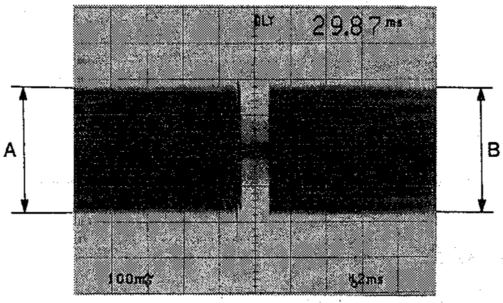
11-7. 320 FH FREE RUN ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
- Turn the power switch OFF and then turn ON again. - Connect the frequency counter through the oscilloscope to test point (TP). - Insert a S-VHS blank tape. - STOP (E-E) mode	TP608/CR-42 (F-2) 5.060±0.003 MHz	⊘RV602/CR-42 (G-2)

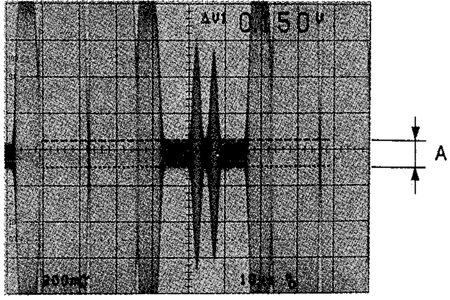
11-8. VIDEO OUT MIX Y LEVEL ADJUSTMENT

Machine condition for adjustment	**Specifications**	**Adjustments**
- Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope - WAVEFORM	VIDEO OUT connector (terminated with 75 Ω)  A=1.00±0.05 V p-p	⊘RV480/VO-37C (G-4)

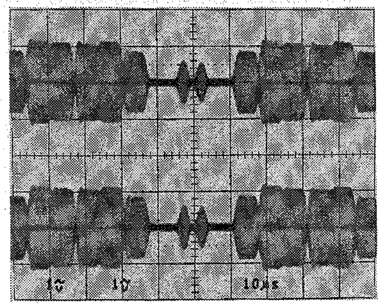
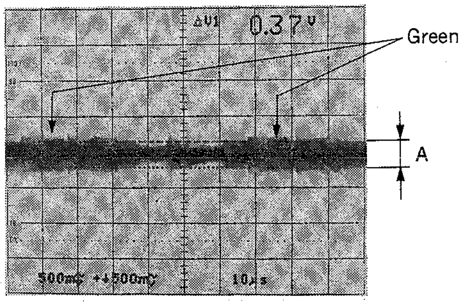
11-9. PB CHROMA RF LEVEL BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45PS. • Tracking Control VR : Maximize the A and B level. • Connect the oscilloscope to test point (TP) and connector pin. • After the adjustment, set the tracking VR to center click (FIXED).	TP601/CR-42 (G-3)  $\frac{B}{A}$=100±5% (A is reference level.)	❶RV606/CR-42 (E-3) Trigger: CN804-5/RP-62E (C-1) (RP extension tool: SW'ING PULSE terminal)

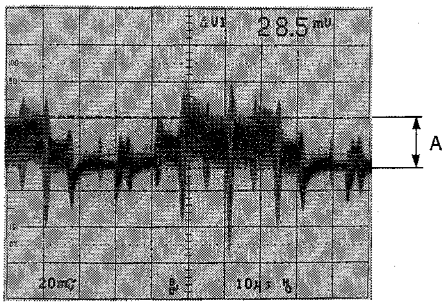
11-10. CONVERTER BALANCE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP501/CR-42 (C-3)  Minimize the A level. (A≦0.2 V)	❶RV603/CR-42 (E-3) Trigger : TP302/VO-37C (A-5)

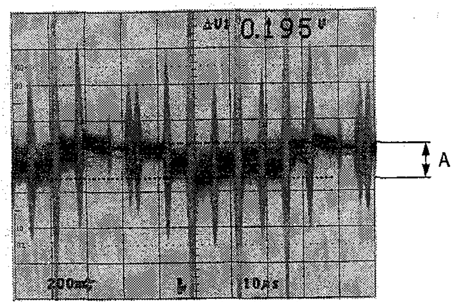
11-11. CROSSTALK CANCELLER ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
- Play back the color bars signal portion of the alignment tape KRV-45HPS. - Connect the oscilloscope to test points (TPs). - Adjust using TRACKING Control VR/Key Panel so that A level is minimum. Oscilloscope - ADD - CH-2 : INV	CH-1 : TP501/CR-42 (C-3) CH-2 : TP502/CR-42 (A-4)   Minimize the A (Green portion) level. (A≦400 mV)	⊘RV501/CR-42 (C-4) ⊘RV502/CR-42 (B-4) - Adjust alternately. Trigger : TP301/VO-37C (C-5)

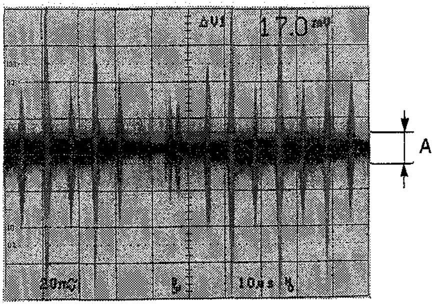
11-12. CPI ADJUSTMENT (1)

Machine condition for adjustment	Specifications	Adjustments
- EDIT switch : ON - Play back the color bars signal portion of the alignment tape KRV-45HPS. - Connect the oscilloscope to test points (TPs).	TP801/CR-42 (D-1)  Minimize the A level. (A≦30 mV)	⊘CV801/CR-42 (D-2) ⊘RV801/CR-42 (D-2) - Adjust alternately. Trigger : TP301/VO-37C (C-5)

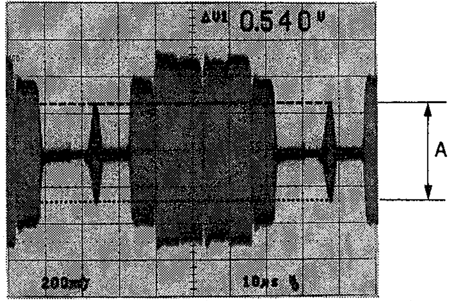
11-13. CPI ADJUSTMENT (2)

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • EDIT switch: ON • Connect the oscilloscope to test points (TPs).	TP820/CR-42 (A-1)  Minimize the A (Green portion) level. (A≦200 mV)	⊘ CV800/CR-42 (D-2) ⊘ RV800/CR-42 (E-2) • Adjust alternately. Trigger : TP301/VO-37C (C-5)

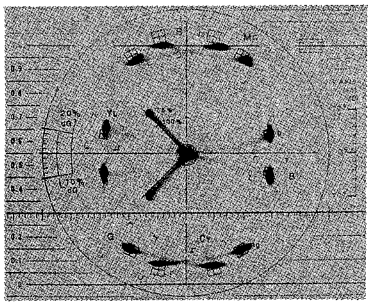
11-14. CPI ADJUSTMENT (3)

Machine condition for adjustment	Specifications	Adjustments
• Connect between TP850/CR-42 (B-1) and TP851/CR-42 (B-1) on the CR-42 board with shorting clip. • EDIT switch: ON • Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs). • After the adjustment, remove the shorting clip and set the EDIT switch to OFF.	TP870/CR-42 (C-1)  Minimize the A (Green portion) level. (A≦20 mV)	⊘ CV802/CR-42 (C-2) ⊘ RV802/CR-42 (C-2) • Adjust alternately. Trigger : TP301/VO-37C (C-5)

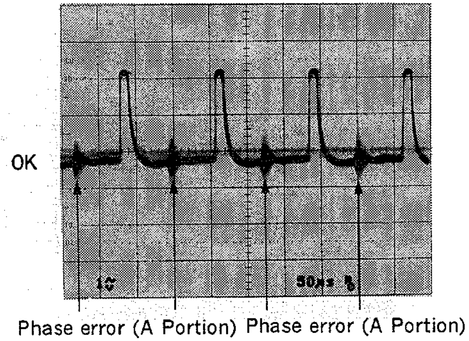
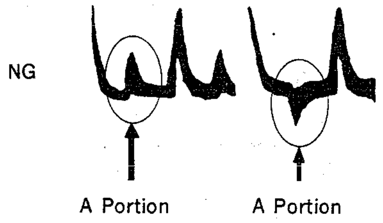
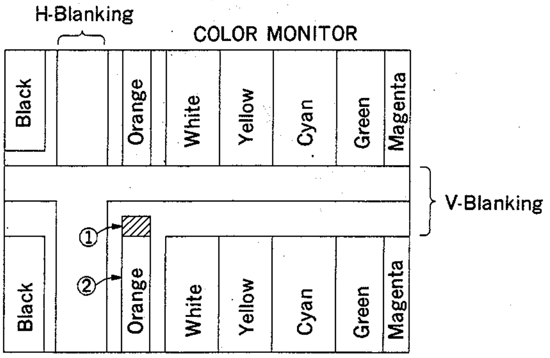
11-15. NR IN CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test points (TPs).	TP890/CR-42 (E-1)  A=0.54±0.02 Vp-p	⊘ RV860/CR-42 (D-1) Trigger: TP301/VO-37A (C-5)

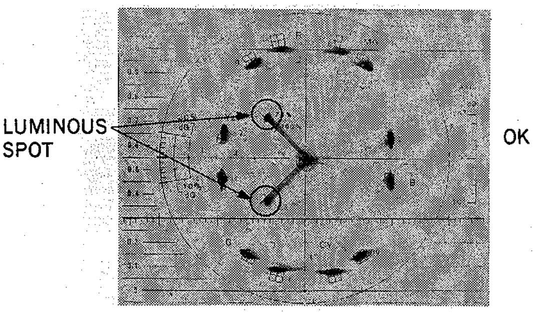
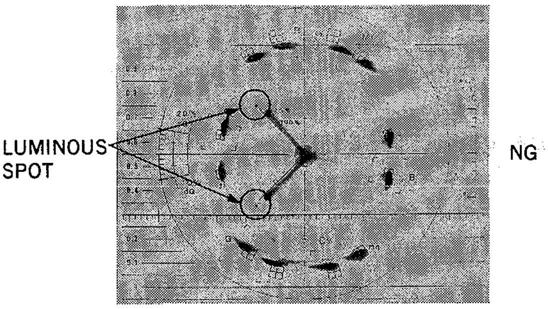
11-16. NR OUT CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform/Vector monitor • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  The luminous spot of burst shall be at 75% position on mark.	⊘ RV401/VO-37C (E-4)

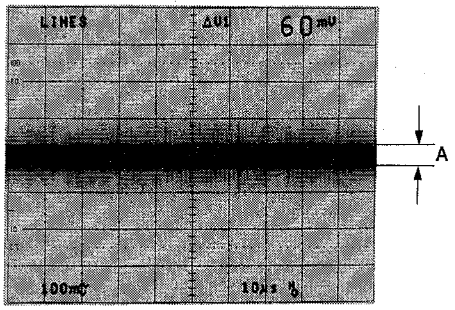
11-17. PB 135° PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Connect the color monitor to VIDEO OUT connector. • Connect the oscilloscope to test point (TP). • Turn the RV101/NR-40A (J-2) and RV102/NR-40A (J-2) clockwise fully. • Play back the color bars signal portion of the alignment tape KRV-45HPS.	TP106/NR-40A (H-2)  Phase error (A portion) is minimum.  NG A Portion A Portion VIDEO OUT connector/Rear Panel  H-Blanking COLOR MONITOR Black Orange White Yellow Cyan Green Magenta V-Blanking ① ② Black Orange White Yellow Cyan Green Magenta Check that ① portion (quasi burst) and ② portion (burst) are one and the same color (orange).	⊘RV101/NR-40A (J-2)
	When the specification is not satisfied, the adjustment should be performed using RV102.	⊘RV102/NR-40A (J-2)
Color Monitor • H-V DELAY: ON	If the adjustment cannot be made using RV102, change the shorting position on short land slit (SL1 and SL2) and readjust above items using the RV102.	• Short land slit SL1/NR-40A (H-3) SL2/NR-40A (H-3)

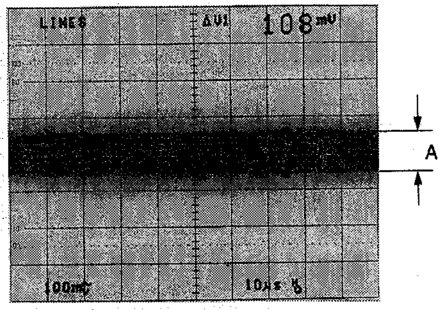
11-18. QUASI BURST LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope • VECTOR	VIDEO OUT connector (terminated with 75Ω)   The luminous spots of burst shall be at 75% position on mark. (The level of luminous spots are equal.)	⊘ RV103/NR-40A (J-3)

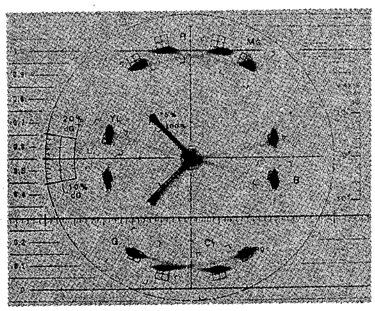
11-19. ANALOG NOISE CANCEL 2H CCD LEVEL/PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to test point (TP).	TP201/NR-40A (D-4)  Minimize the A level. (A≦100 mV)	• Phase Adjustment ⊘ RV202/NR-40A (E-3) • Level Adjustment ⊘ RV204/NR-40A (F-3)

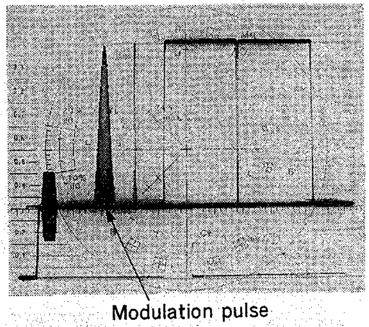
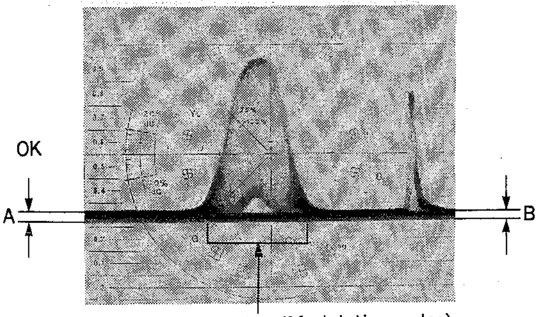
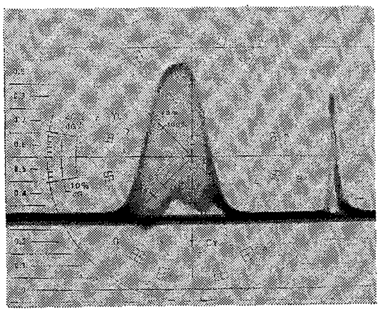
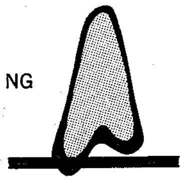
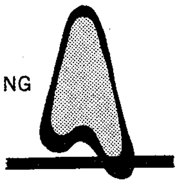
11-20. ANALOG NOISE CANCEL 4.43 NTSC PHASE ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion (SP) of the alignment tape KRV-51HN. • SYSTEM SELECT switch : 4.43 NTSC • Connect the oscilloscope to test point (TP). • After the adjustment, set the SYSTEM SELECT switch to PAL.	TP201/NR-40A (D-4)  Minimize the A level. (A≦150 mV)	⊘RV203/NR-40A (F-3)

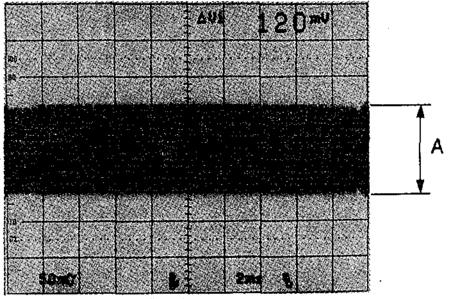
11-21. VIDEO OUT MIX CHROMA LEVEL ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Play back the color bars signal portion of the alignment tape KRV-45HPS. Waveform Monitor/Vector Scope • VECTOR	VIDEO OUT connector (terminated with 75 Ω)  • The luminous spot of burst shall be at 75% position on mark. • One and more luminous spots shall within the frame of each ⊞ mark.	⊘RV481/VO-37C (G-3)

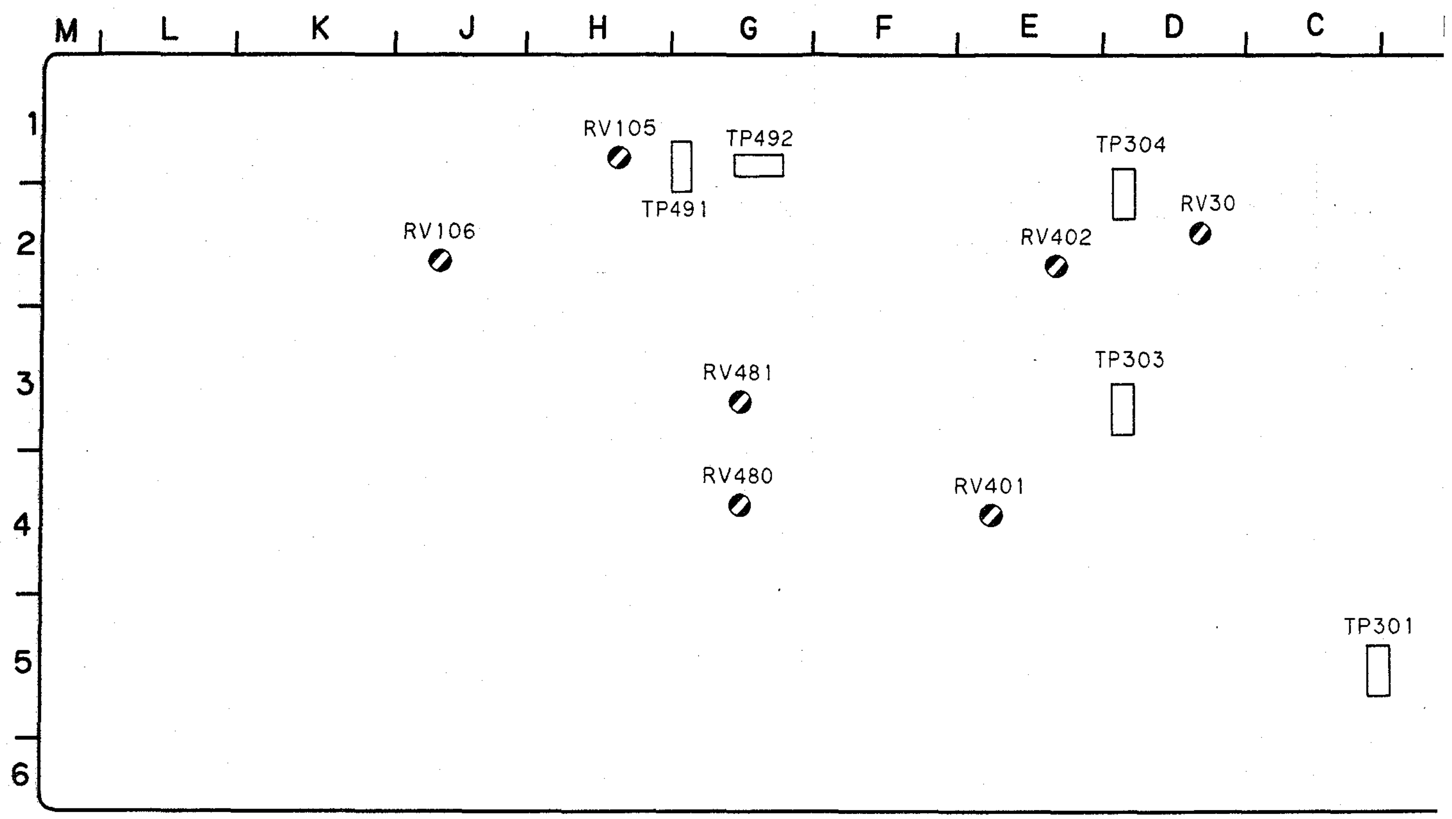
11-22. PB Y/C DELAY ADJUSTMENT

Machine condition for adjustment	Specifications	Adjustments
• Record (S-VHS mode) the pulse & bar signal by a video cassette recorder (SONY SVO-9620 or SVO-9500MDP). • Play back (measurement) the pulse & bar signal portion of cassette tape by the video player SVP-9020. Waveform Monitor/Vector Scope WAVEFORM • HORIZONTAL MAG: ON • GAIN X5 • UNCAL	VIDEO OUT connector (terminated with 75 Ω)  OK  Bottom side portion (Modulation pulse) A=B NG  Flatten the bottom side portion (envelope) of modulation pulse.  Chroma Signal Delay  Chroma Signal Advance	⓿ RV601/CR-42 (F-3)

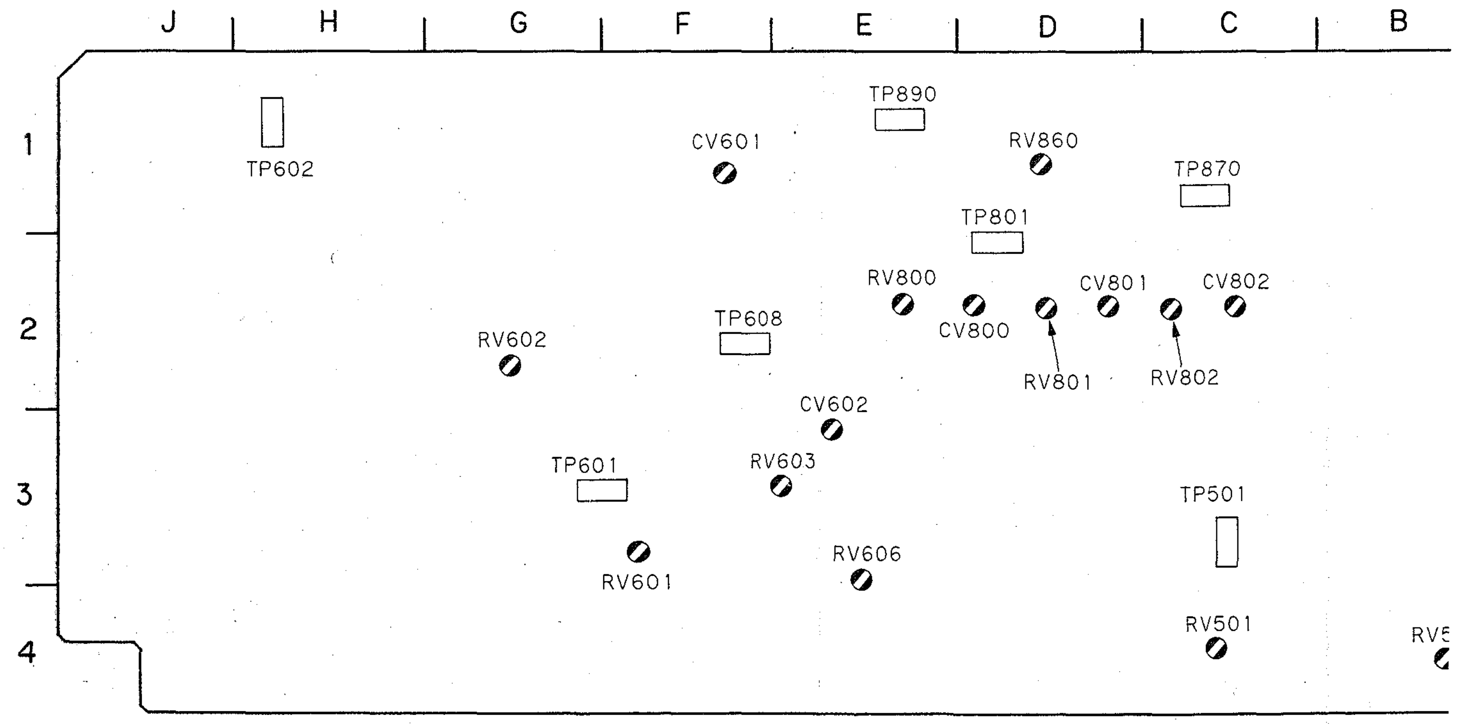
11-23. PB Y RF LEVEL ADJUSTMENT

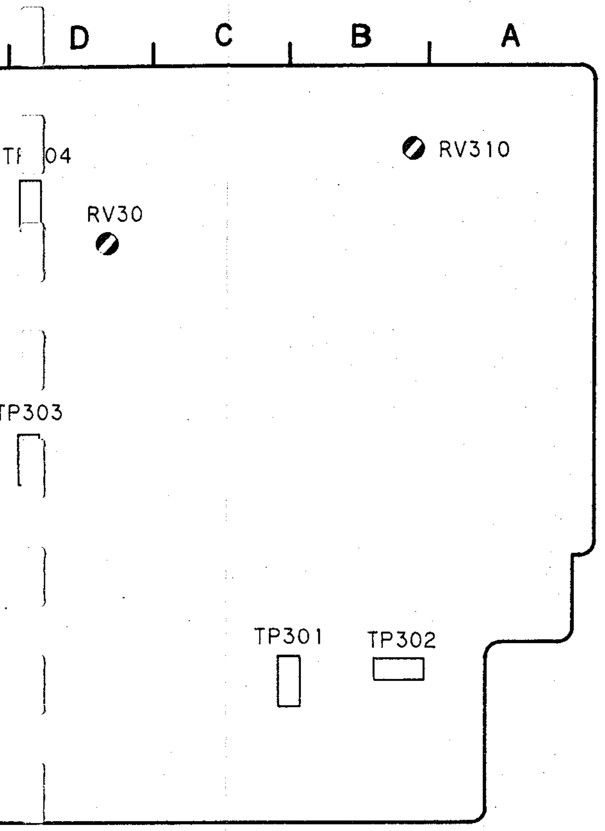
Machine condition for adjustment	Specifications	Adjustments
• Turn the RV201/RP-62E (B-1) to *mechanical center* position. • Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to connector pin (Pin 2 of CN804). (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO PB S-VHS RF and SW'ING PULSE.)	CN804-2/RP-62E (C-1) (RP extension tool: VIDEO PB S-VHS RF terminal)  Check that the Y RF signal is output on CN804-2. (A=100~160 mV p-p)	Trigger: CN804-5/RP-62E (C-1) (RP extension tool: SW'ING PULSE terminal)

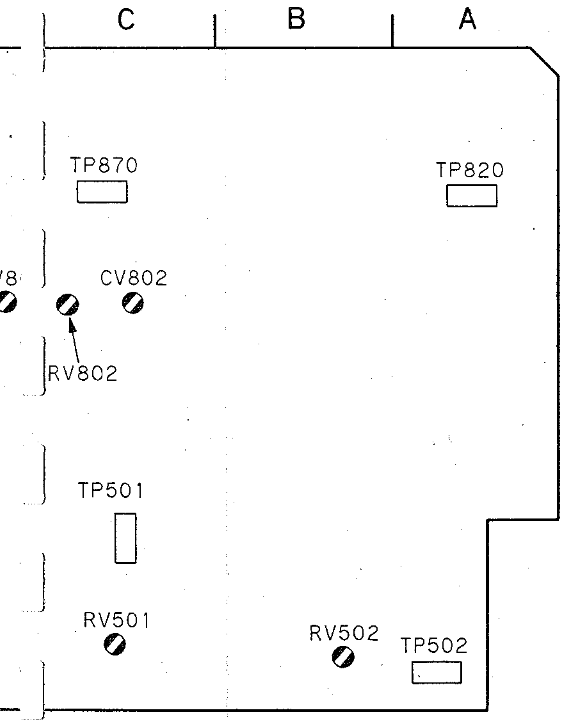
Location of RVs and TPs on VO-37C board. (B side)


M
L
K
J
H
G
F
E
D
C
1
2
3
4
5
6
RV105
TP492
TP491
TP304
RV30
RV106
RV402
RV481
TP303
RV480
RV401
TP301

Location of CVs, E, RVs, SLs and TPs on CR-42 board. (B side)

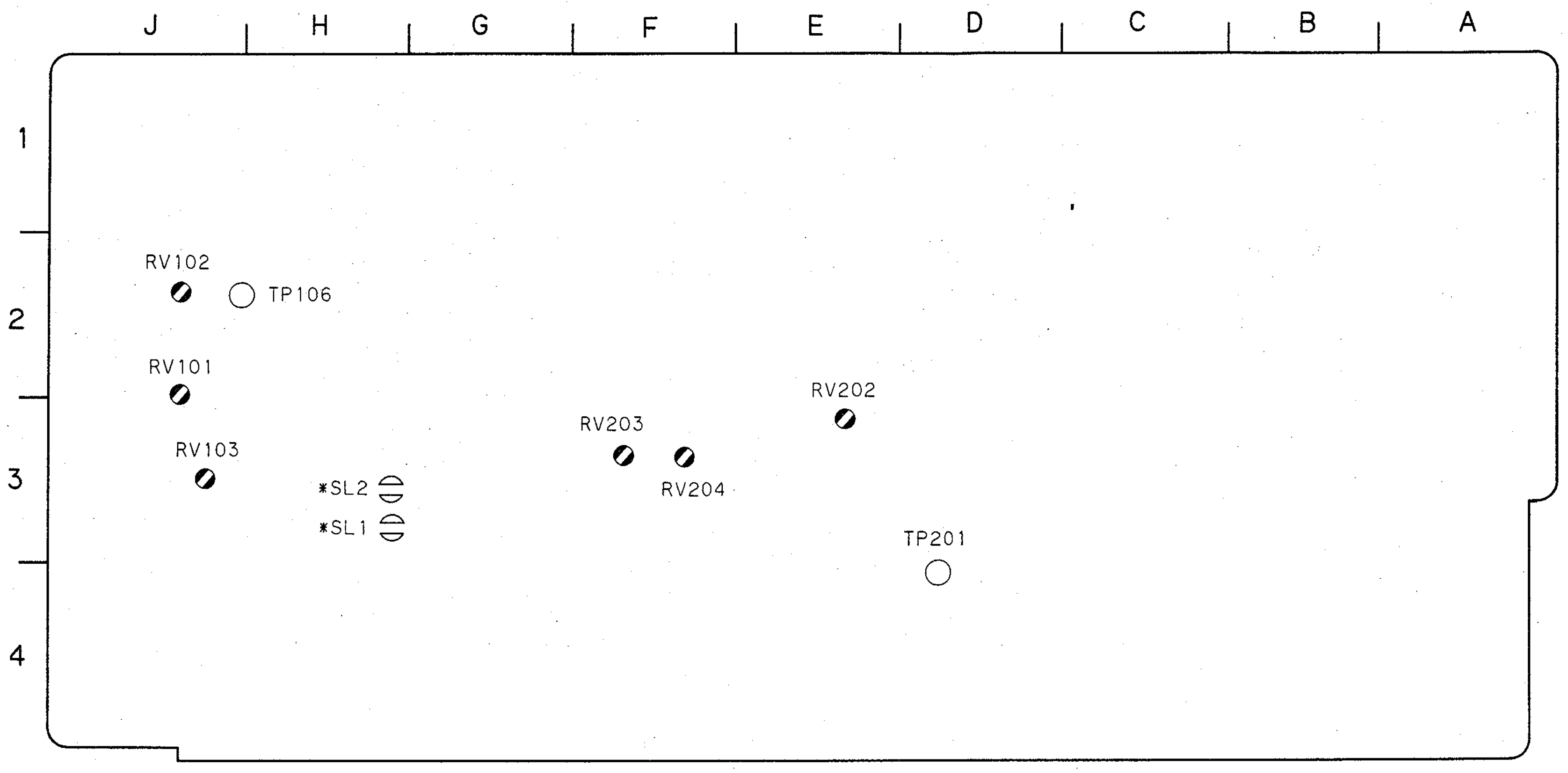

J
H
G
F
E
D
C
B
1
2
3
4
TP890
TP602
CV601
RV860
TP870
TP801
RV800
CV801
CV802
CV800
TP608
RV602
RV801
RV802
CV602
TP601
RV603
TP501
RV601
RV606
RV501
RV5


D
C
B
A
TP 04
RV310
RV30
TP303
TP301
TP302

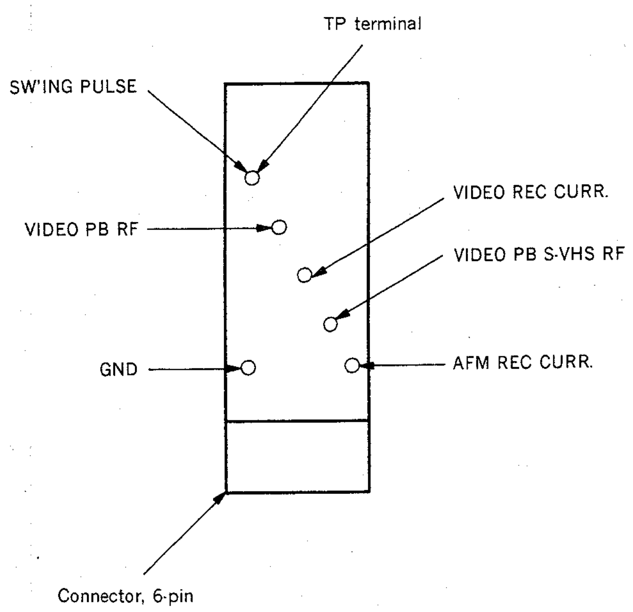

C
B
A
TP870
TP820
78
CV802
RV802
TP501
RV501
RV502
TP502

Location of RVs, SLs and TPs on NR-40A board. (A side)

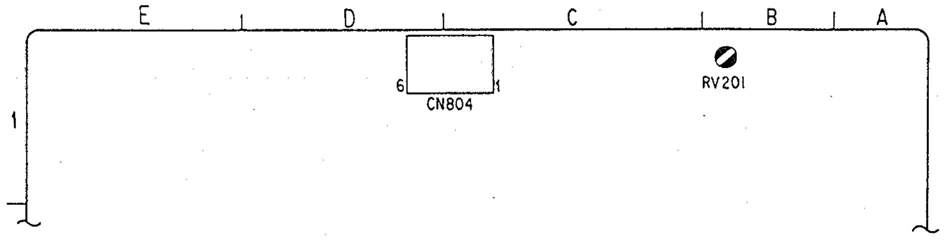
∗ mark; B side mount

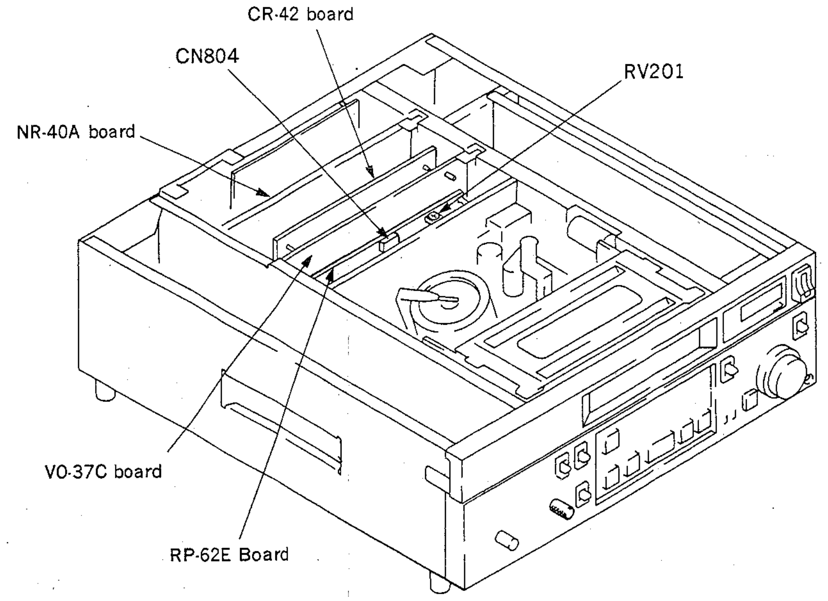

J
H
G
F
E
D
C
B
A
1
2
3
4
RV102
TP106
RV101
RV103
∗SL2
∗SL1
RV203
RV204
RV202
TP201

Location of TP terminals on RP extension tool

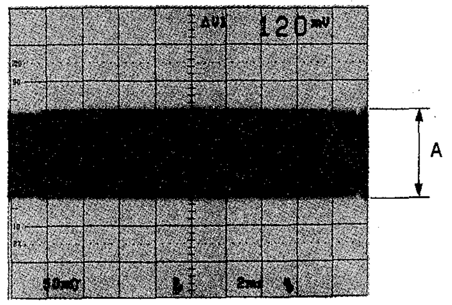

TP terminal
SW'ING PULSE
VIDEO REC CURR.
VIDEO PB RF
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6-pin

Location of CN and RV on RP-62E board. (A side)

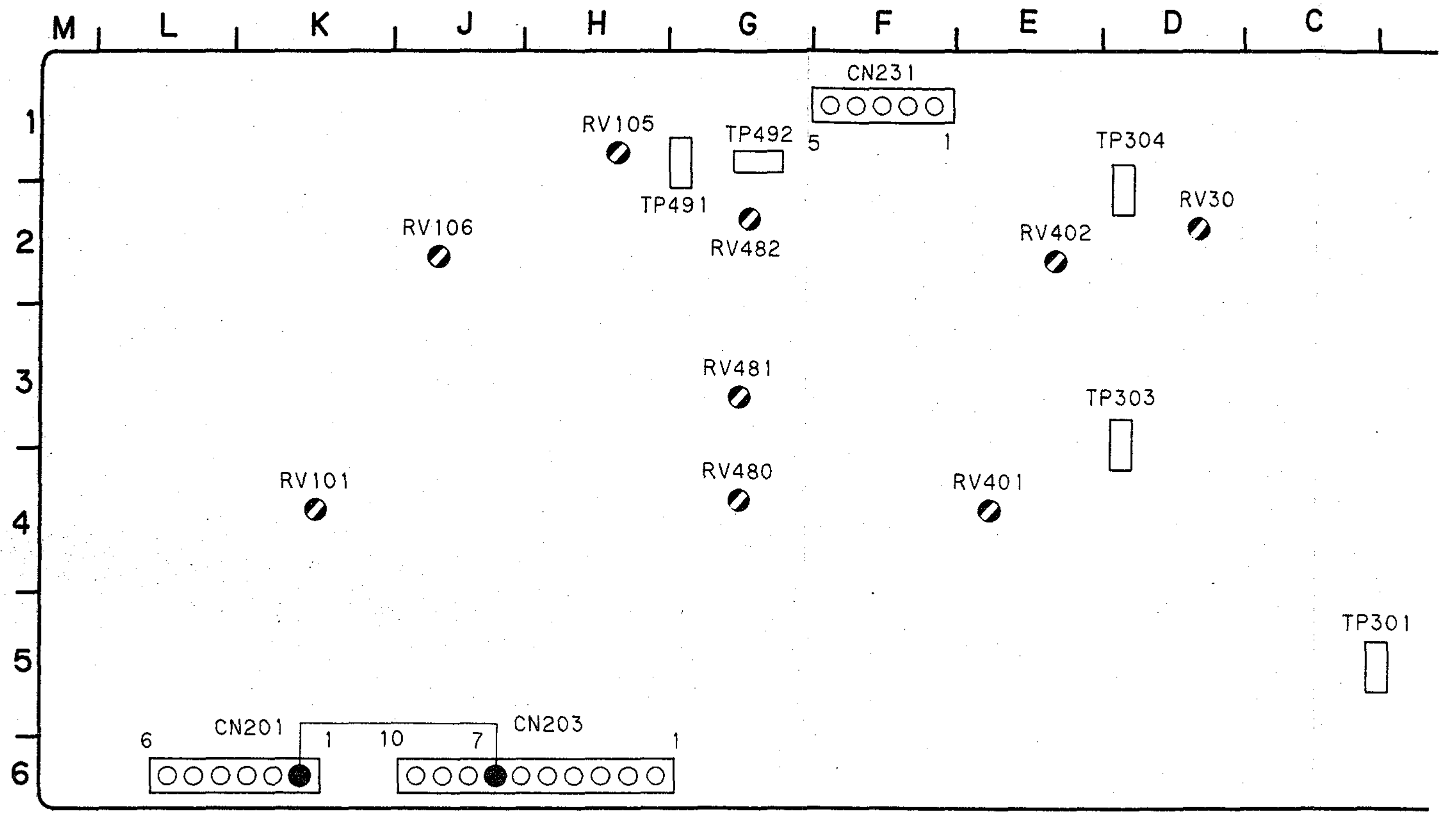

E
D
C
B
A
1
6
1
CN804
RV201


CR-42 board
CN804
RV201
NR-40A board
VO-37C board
RP-62E Board

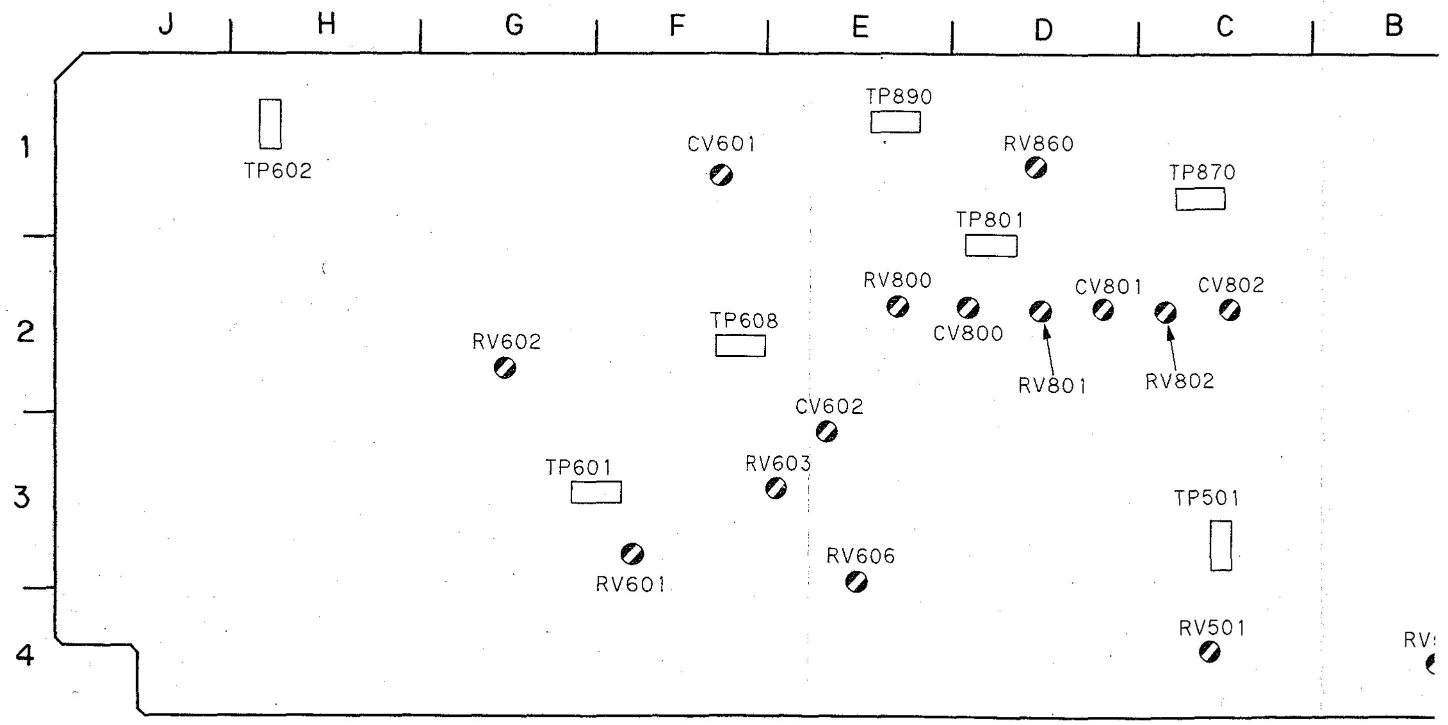
10-25. PB Y RF LEVEL ADJUSTMENT

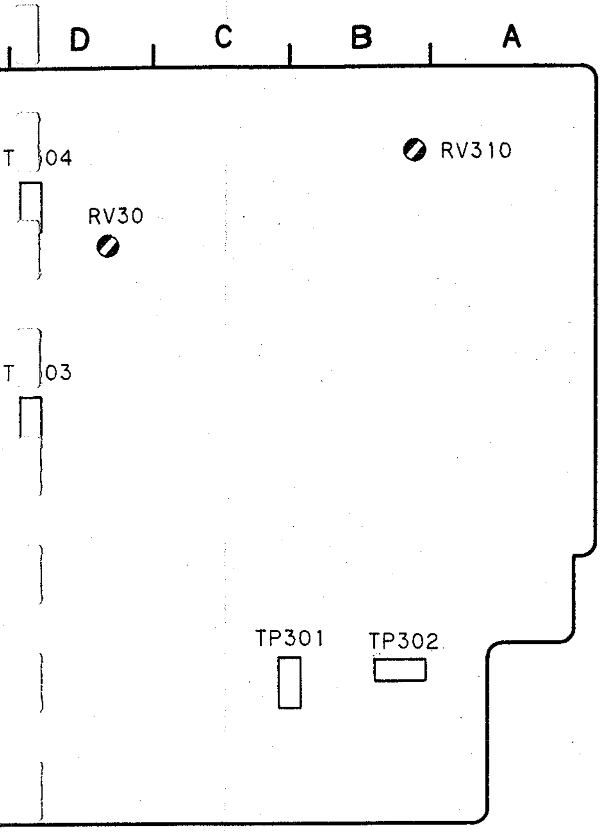
Machine condition for adjustment	Specifications	Adjustments
• Turn the RV201/RP-62E (B-1) to mechanical center position. • Play back the color bars signal portion of the alignment tape KRV-45HPS. • Connect the oscilloscope to connector pin (Pin 2 of CN804). (When using RP extension tool, connect the oscilloscope to TP terminals of VIDEO PB S-VHS RF and SW'ING PULSE.)	CN804-2/RP-62E (C-1) (RP extension tool: VIDEO PB S-VHS RF terminal)  Check that the Y RF signal is output on CN804-2. (A=100±160 mV p-p)	Trigger: CN804-5/RP-62E (C-1) (RP extension tool: SW'ING PULSE terminal)

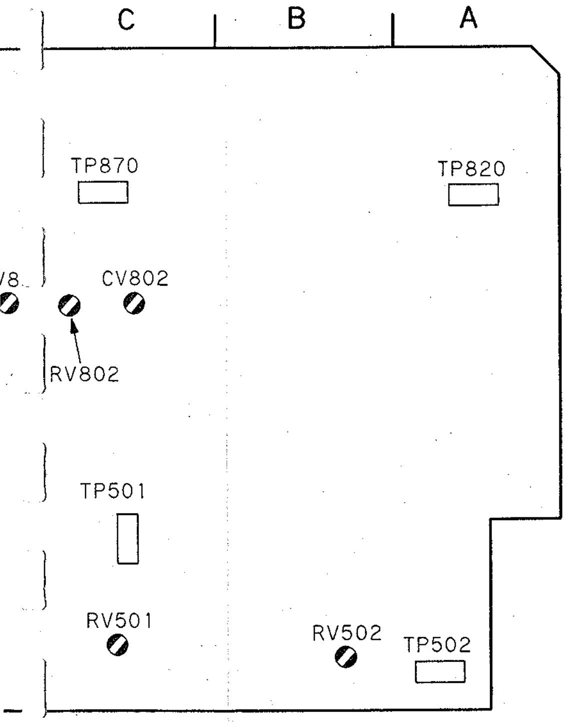
Location of CNs, RVs and TPs on VO-37C board. (B side)


M
L
K
J
H
G
F
E
D
C
1
2
3
4
5
6
CN231
5
1
RV105
TP492
TP491
RV482
RV106
TP304
RV30
RV402
RV481
TP303
RV101
RV480
RV401
TP301
6
CN201
1
10
7
CN203
1

Location of CVs, E, RVs, SLs and TPs on CR-42 board. (B side)

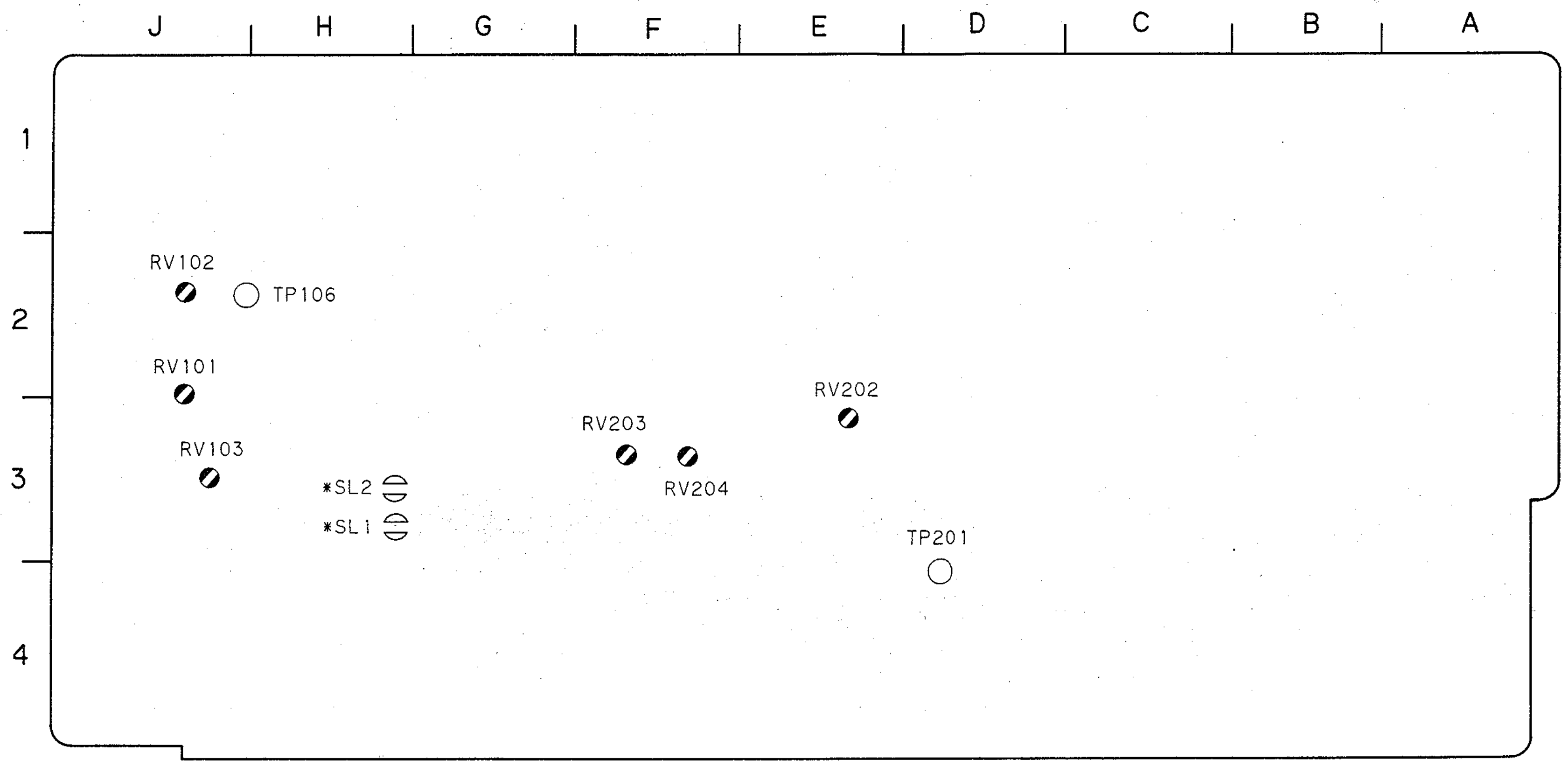

J
H
G
F
E
D
C
B
1
2
3
4
TP602
CV601
TP890
RV860
TP870
TP801
RV800
CV801
CV802
TP608
CV800
RV602
RV801
RV802
CV602
TP601
RV603
TP501
RV601
RV606
RV501


D
C
B
A
T
04
RV310
RV30
T
03
TP301
TP302

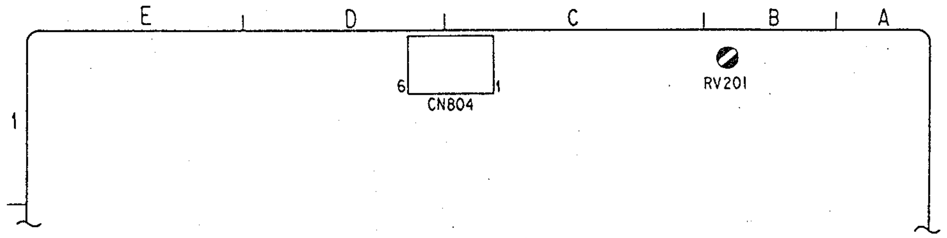

C
B
A
TP870
TP820
/8
CV802
RV802
TP501
RV501
RV502
TP502

Location of RVs, SLs and TPs on NR-40A board. (A side)

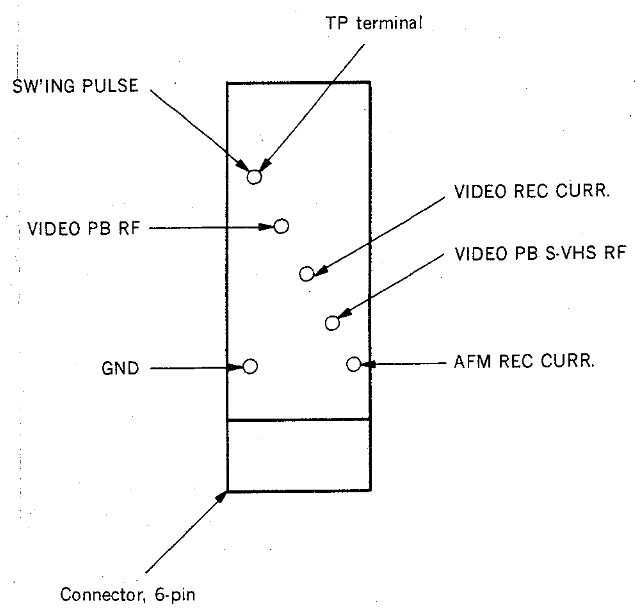
* mark ; B side mount

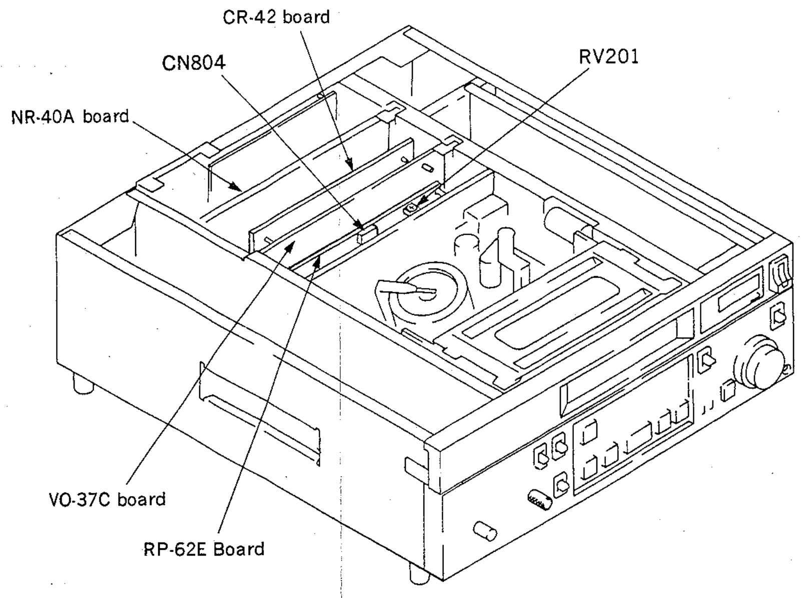

J
H
G
F
E
D
C
B
A
1
2
3
4
RV102
TP106
RV101
RV103
*SL2
*SL1
RV203
RV204
RV202
TP201

Location of CN and RV on RP-62E board. (A side)


E
D
C
B
A
1
6
1
CN804
RV201

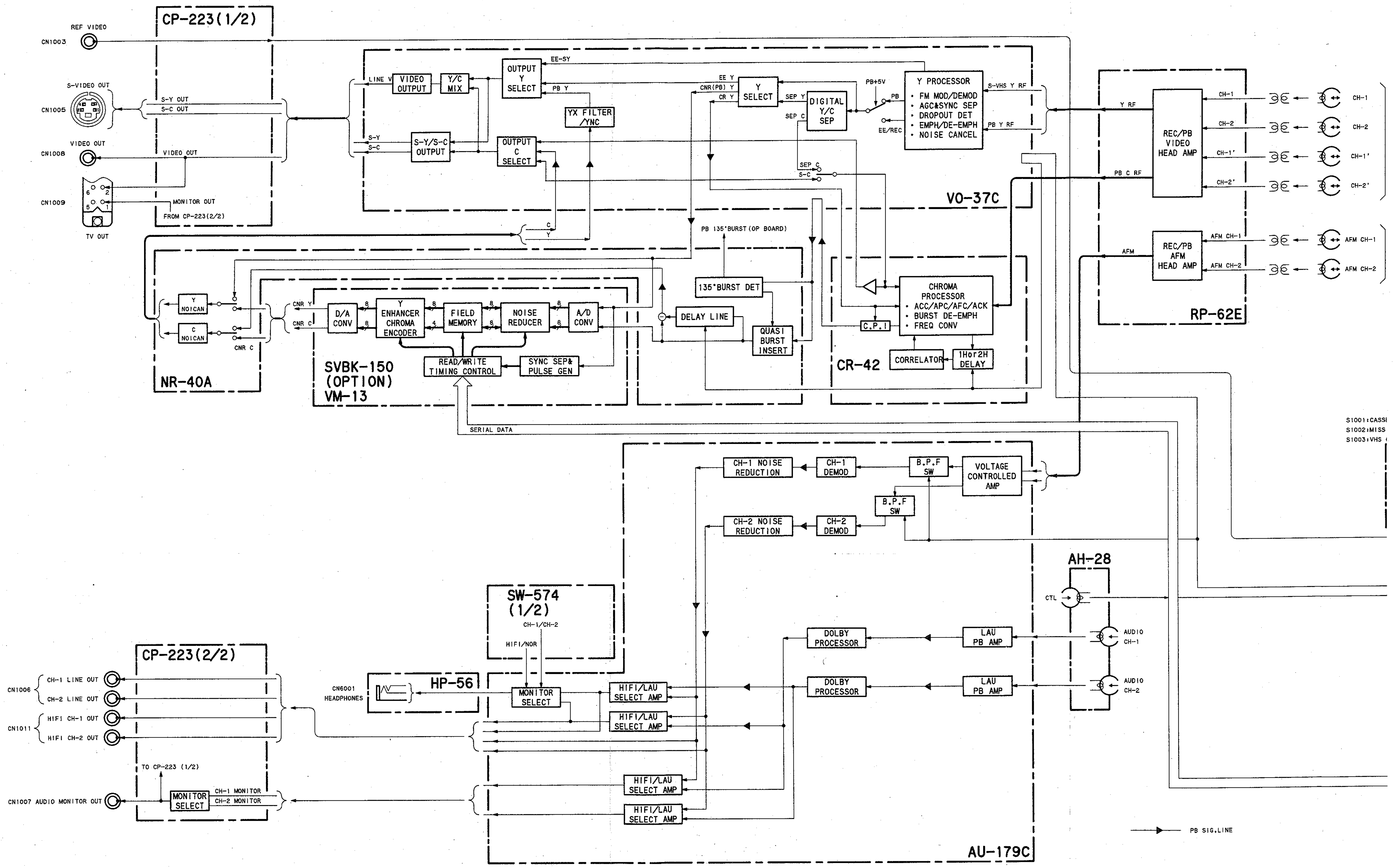
Location of TP terminals on RP extension tool

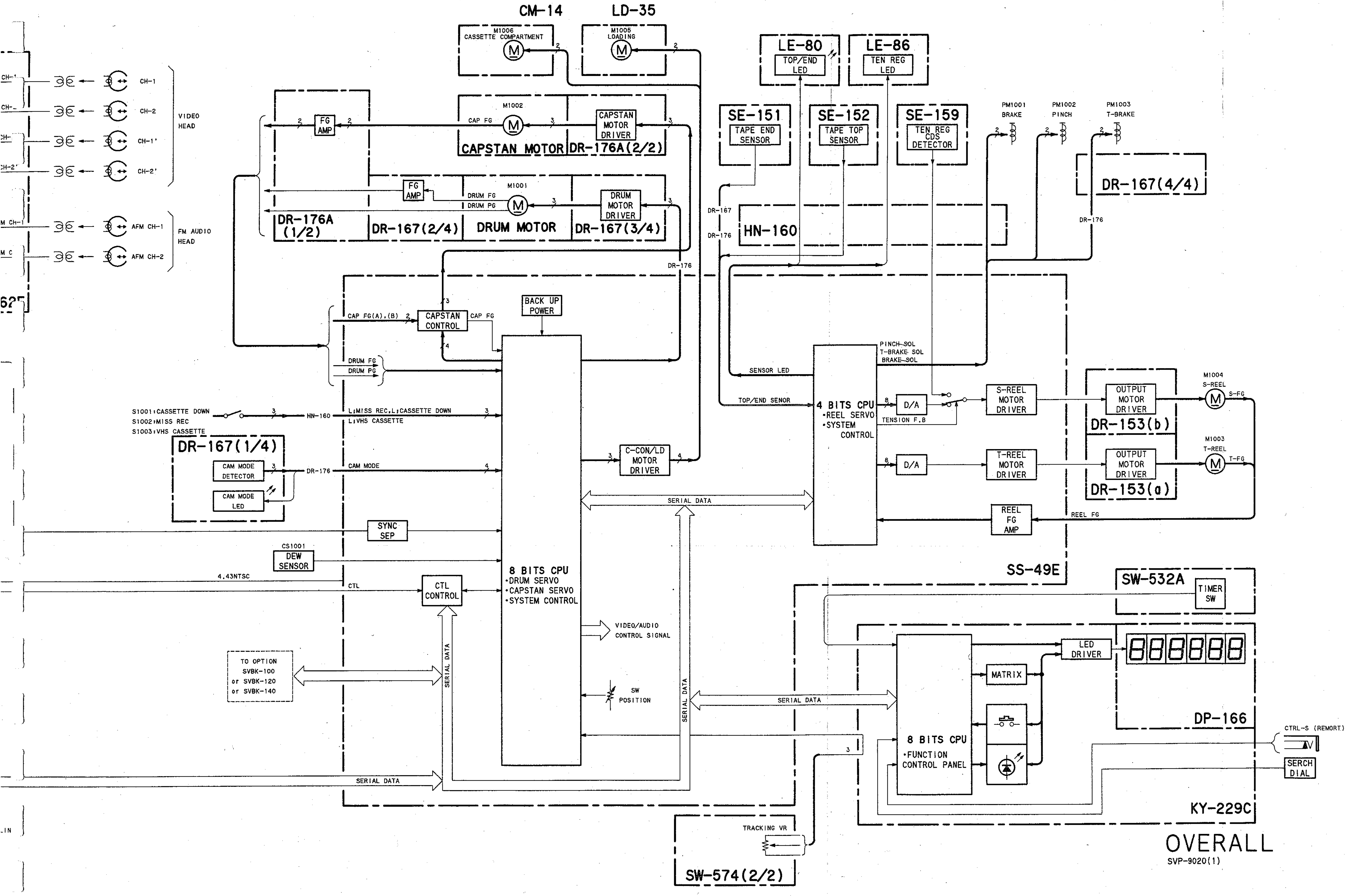

TP terminal
SW'ING PULSE
VIDEO REC CURR.
VIDEO PB RF
VIDEO PB S-VHS RF
GND
AFM REC CURR.
Connector, 6-pin


CR-42 board
CN804
RV201
NR-40A board
VO-37C board
RP-62E Board

SECTION 12
BLOCK DIAGRAMS

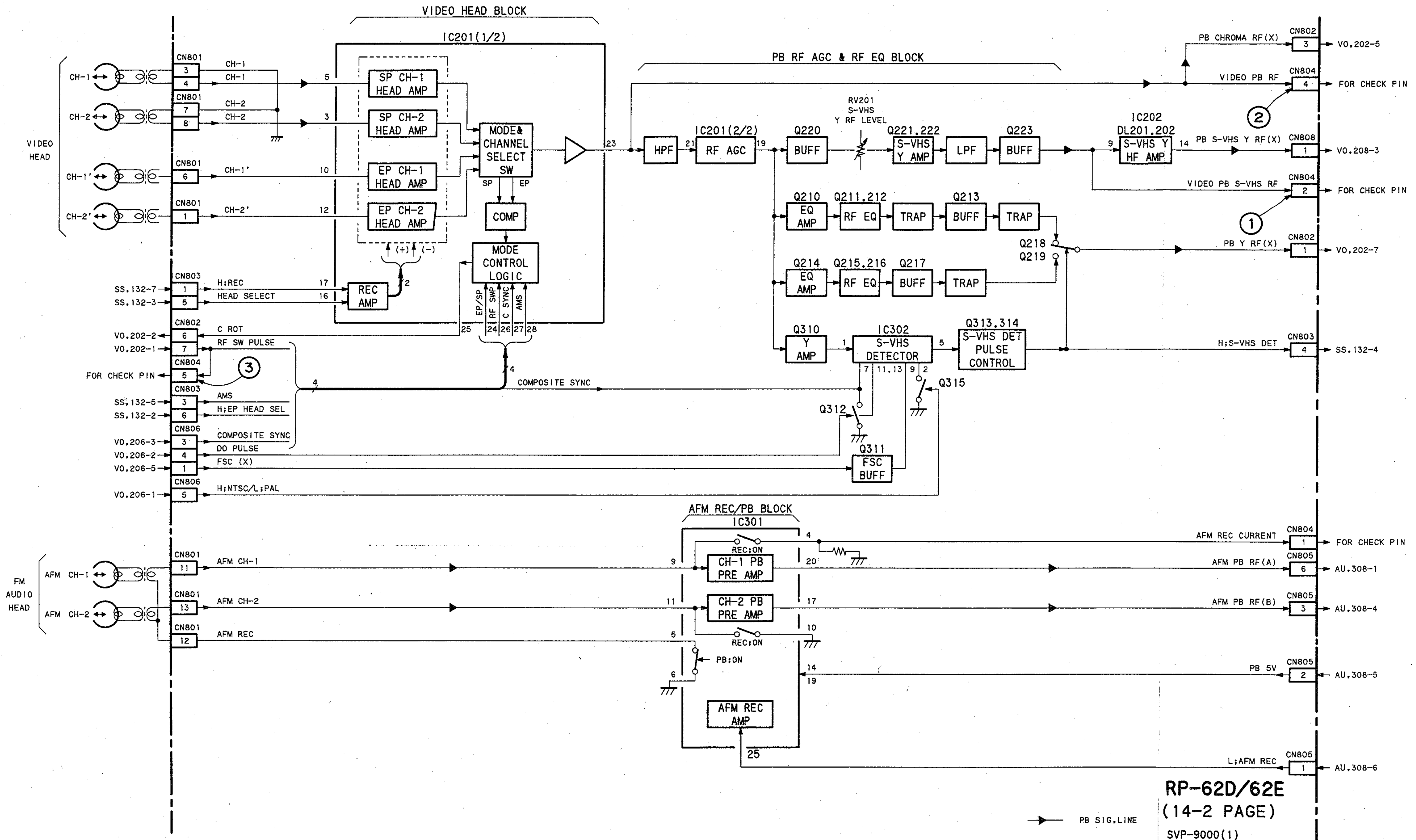
OVERALL


CP-223(1/2)
REF VIDEO
CN1003
S-VIDEO OUT
CN1005
S-Y OUT
S-C OUT
VIDEO OUT
CN1008
VIDEO OUT
CN1009
MONITOR OUT
FROM CP-223(2/2)
TV OUT
EE-SY
LINE V
VIDEO OUTPUT
Y/C MIX
OUTPUT Y SELECT
PB Y
YX FILTER /YNC
EE Y
CNR(PB) Y
CR Y
Y SELECT
SEP Y
SEP C
DIGITAL Y/C SEP
PB+5V
PB
EE/REC
Y PROCESSOR
• FM MOD/DEMOD
• AGC&SYNC SEP
• DROPOUT DET
• EMPH/DE-EMPH
• NOISE CANCEL
S-VHS Y RF
PB Y RF
S-Y
S-C
S-Y/S-C OUTPUT
OUTPUT C SELECT
SEP C
S-C
VO-37C
C
Y
PB 135°BURST(OP BOARD)
Y NOICAN
C NOICAN
CNR C
CNR Y
NR-40A
D/A CONV
Y ENHANCER CHROMA ENCODER
FIELD MEMORY
NOISE REDUCER
A/D CONV
8
4
READ/WRITE TIMING CONTROL
SYNC SEP& PULSE GEN
SVBK-150 (OPTION) VM-13
SERIAL DATA
135°BURST DET
DELAY LINE
QUASI BURST INSERT
C.P.I
CHROMA PROCESSOR
• ACC/APC/AFC/ACK
• BURST DE-EMPH
• FREQ CONV
CORRELATOR
1Hor2H DELAY
CR-42
Y RF
PB C RF
REC/PB VIDEO HEAD AMP
CH-1
CH-2
CH-1'
CH-2'
AFM
REC/PB AFM HEAD AMP
AFM CH-1
AFM CH-2
RP-62E
S1001:CASS
S1002:MISS
S1003:VHS
CH-1 NOISE REDUCTION
CH-1 DEMOD
B.P.F SW
VOLTAGE CONTROLLED AMP
B.P.F SW
CH-2 NOISE REDUCTION
CH-2 DEMOD
AH-28
CTL
AUDIO CH-1
AUDIO CH-2
SW-574 (1/2)
CH-1/CH-2
HIFI/NOR
DOLBY PROCESSOR
LAU PB AMP
DOLBY PROCESSOR
LAU PB AMP
CP-223(2/2)
CN1006
CH-1 LINE OUT
CH-2 LINE OUT
CN1011
HIFI CH-1 OUT
HIFI CH-2 OUT
CN6001 HEADPHONES
HP-56
MONITOR SELECT
HIFI/LAU SELECT AMP
HIFI/LAU SELECT AMP
TO CP-223 (1/2)
MONITOR SELECT
CH-1 MONITOR
CH-2 MONITOR
CN1007 AUDIO MONITOR OUT
HIFI/LAU SELECT AMP
HIFI/LAU SELECT AMP
AU-179C
PB SIG.LINE


CM-14
M1006
CASSETTE COMPARTMENT
LD-35
M1005
LOADING
LE-80
TOP/END LED
LE-86
TEN REG LED
SE-151
TAPE END SENSOR
SE-152
TAPE TOP SENSOR
SE-159
TEN REG CDS DETECTOR
PM1001
BRAKE
PM1002
PINCH
PM1003
T-BRAKE
DR-167(4/4)
DR-176
CH-1
CH-2
CH-1'
CH-2'
VIDEO HEAD
AFM CH-1
AFM CH-2
FM AUDIO HEAD
FG AMP
M1002
CAP FG
CAPSTAN MOTOR DRIVER
CAPSTAN MOTOR
DR-176A(2/2)
FG AMP
M1001
DRUM FG
DRUM PG
DRUM MOTOR DRIVER
DR-176A (1/2)
DR-167(2/4)
DRUM MOTOR
DR-167(3/4)
DR-167
DR-176
HN-160
DR-176
CAP FG(A),(B)
CAPSTAN CONTROL
CAP FG
BACK UP POWER
DRUM FG
DRUM PG
S1001:CASSETTE DOWN
S1002:MISS REC
S1003:VHS CASSETTE
HN-160
L:MISS REC,L:CASSETTE DOWN
L:VHS CASSETTE
DR-167(1/4)
CAM MODE DETECTOR
CAM MODE LED
DR-176
CAM MODE
C-CON/LD MOTOR DRIVER
SERIAL DATA
SYNC SEP
CS1001
DEW SENSOR
4.43NTSC
CTL
CTL CONTROL
8 BITS CPU
•DRUM SERVO
•CAPSTAN SERVO
•SYSTEM CONTROL
VIDEO/AUDIO CONTROL SIGNAL
TO OPTION
SVBK-100
or SVBK-120
or SVBK-140
SERIAL DATA
SW POSITION
SERIAL DATA
SERIAL DATA
SERIAL DATA
PINCH SOL
T-BRAKE SOL
BRAKE SOL
SENSOR LED
TOP/END SENOR
4 BITS CPU
•REEL SERVO
•SYSTEM CONTROL
D/A
TENSION F.B
D/A
S-REEL MOTOR DRIVER
T-REEL MOTOR DRIVER
OUTPUT MOTOR DRIVER
DR-153(b)
OUTPUT MOTOR DRIVER
DR-153(a)
M1004
S-REEL
S-FG
M1003
T-REEL
T-FG
REEL FG AMP
REEL FG
SS-49E
SW-532A
TIMER SW
LED DRIVER
888888
MATRIX
8 BITS CPU
•FUNCTION CONTROL PANEL
DP-166
CTRL-S (REMORT)
SERCH DIAL
KY-229C
TRACKING VR
SW-574(2/2)
LIN

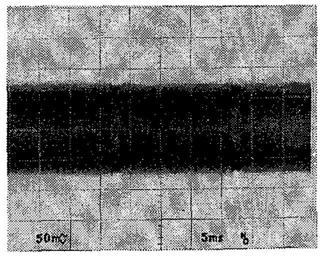
OVERALL
SVP-9020(1)

VIDEO & AFM HEAD AMP

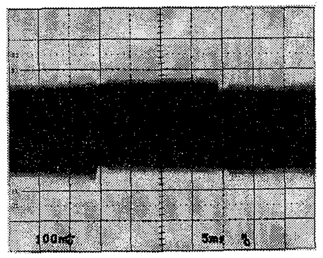

VIDEO HEAD BLOCK
IC201(1/2)
PB RF AGC & RF EQ BLOCK
VIDEO HEAD
CH-1
CH-2
CH-1'
CH-2'
CN801
CH-1
CH-2
CH-1'
CH-2'
SP CH-1 HEAD AMP
SP CH-2 HEAD AMP
EP CH-1 HEAD AMP
EP CH-2 HEAD AMP
MODE& CHANNEL SELECT SW
SP
EP
COMP
MODE CONTROL LOGIC
EP/SP
RF SWP
C SYNC
AMS
REC AMP
(+)
(-)
CN803
SS.132-7
SS.132-3
H;REC
HEAD SELECT
CN802
VO.202-2
VO.202-1
C ROT
RF SW PULSE
CN804
FOR CHECK PIN
③
COMPOSITE SYNC
SS.132-5
SS.132-2
AMS
H;EP HEAD SEL
CN806
VO.206-3
VO.206-2
VO.206-5
VO.206-1
COMPOSITE SYNC
DO PULSE
FSC (X)
H;NTSC/L;PAL
HPF
IC201(2/2)
RF AGC
Q220
BUFF
RV201
S-VHS
Y RF LEVEL
Q221,222
S-VHS Y AMP
LPF
Q223
BUFF
IC202
DL201,202
S-VHS Y HF AMP
Q210
EQ AMP
Q211,212
RF EQ
TRAP
Q213
BUFF
TRAP
Q218
Q219
Q214
EQ AMP
Q215,216
RF EQ
Q217
BUFF
TRAP
Q310
Y AMP
IC302
S-VHS DETECTOR
Q313,314
S-VHS DET PULSE CONTROL
Q312
Q311
FSC BUFF
Q315
PB CHROMA RF(X)
CN802
VO.202-5
VIDEO PB RF
CN804
FOR CHECK PIN
②
PB S-VHS Y RF(X)
CN808
VO.208-3
VIDEO PB S-VHS RF
CN804
FOR CHECK PIN
①
PB Y RF(X)
CN802
VO.202-7
H;S-VHS DET
CN803
SS.132-4
AFM REC/PB BLOCK
IC301
FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
AFM CH-1
AFM CH-2
AFM REC
REC;ON
CH-1 PB PRE AMP
CH-2 PB PRE AMP
REC;ON
PB;ON
AFM REC AMP
AFM REC CURRENT
CN804
FOR CHECK PIN
AFM PB RF(A)
CN805
AU.308-1
AFM PB RF(B)
CN805
AU.308-4
PB 5V
CN805
AU.308-5
L;AFM REC
CN805
AU.308-6
PB SIG.LINE

RP-62D/62E
(14-2 PAGE)
SVP-9000(1)
SVP-9020(1)

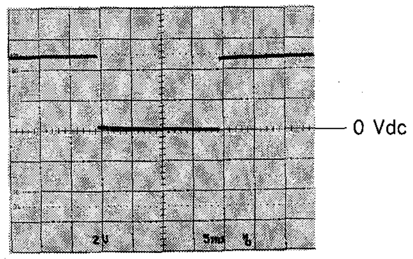
① CN804 pin 2 (C-1) PB mode (S)
CN804 pin 5 (C-1) (TRIG)

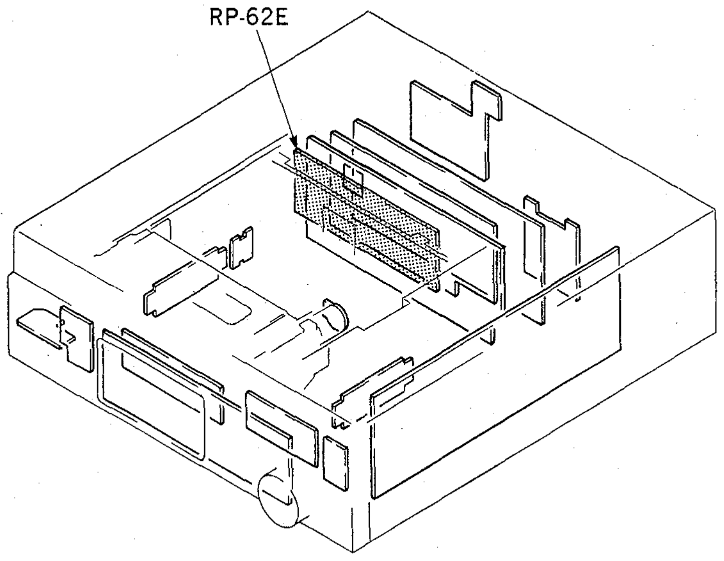


② CN804 pin 4 (C-1) PB mode (N)
CN804 pin 5 (C-1) (TRIG)



③ CN804 pin 5 (C-1) REC/PB mode



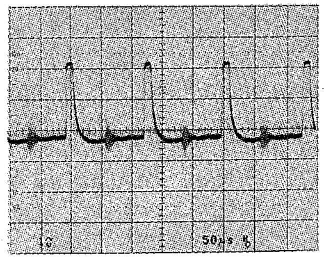


Measurement Condition
PB mode (S): KRV-45HPS
PB mode (N): KRV-45PS

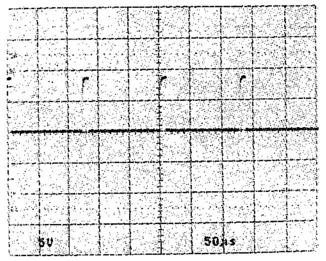
Note: The mentioned items at waveform photograph of this section are measurement point, board location, and machine operation mode.

ANALOG NOISE REDUCER

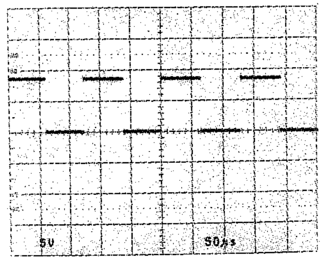
① TP106 (H-2) PB mode



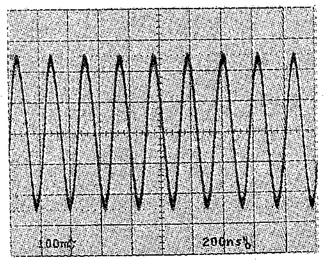
② TP102 (H-1) PB mode



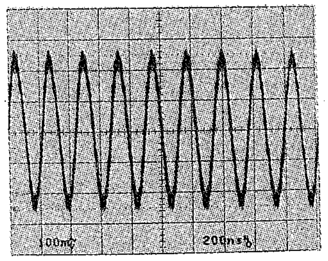
③ TP103 (H-2) PB mode



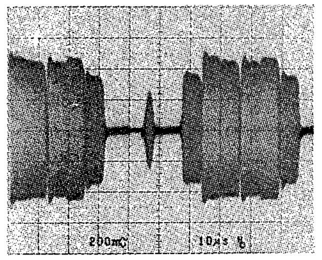
④ TP101 (J-1) PB mode



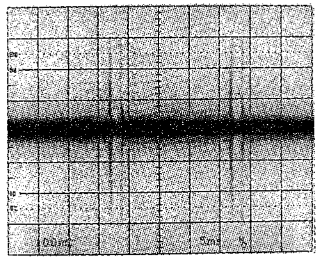
⑤ TP104 (G-1) PB mode



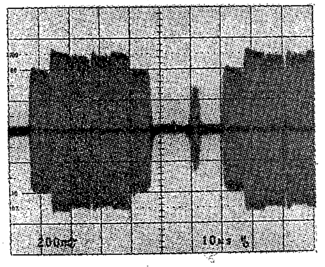
⑥ TP105 (G-1) PB mode



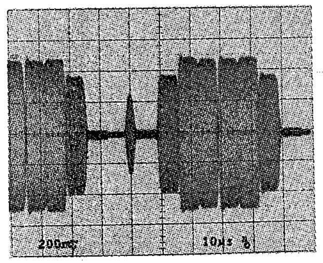
⑦ TP201 (D-4) PB mode



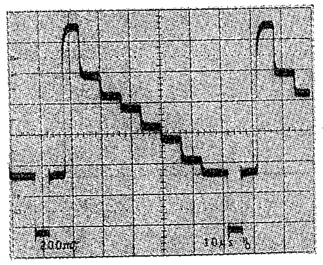
⑧ TP202 (D-4) PB mode



⑨ *CN301-2 (C-4) PB mode (dnr- ON)
CN302-4 (B-4) PB mode



⑩ *CN301-4 (C-4) PB mode (dnr- ON)
CN302-2 (B-4) PB mode

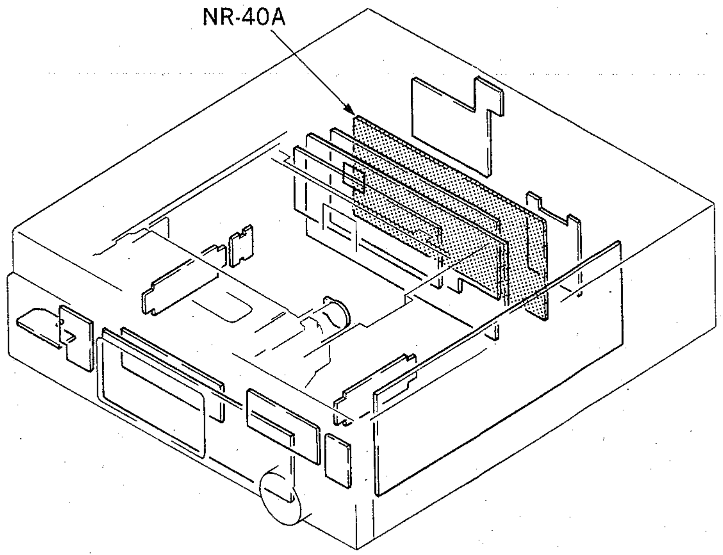


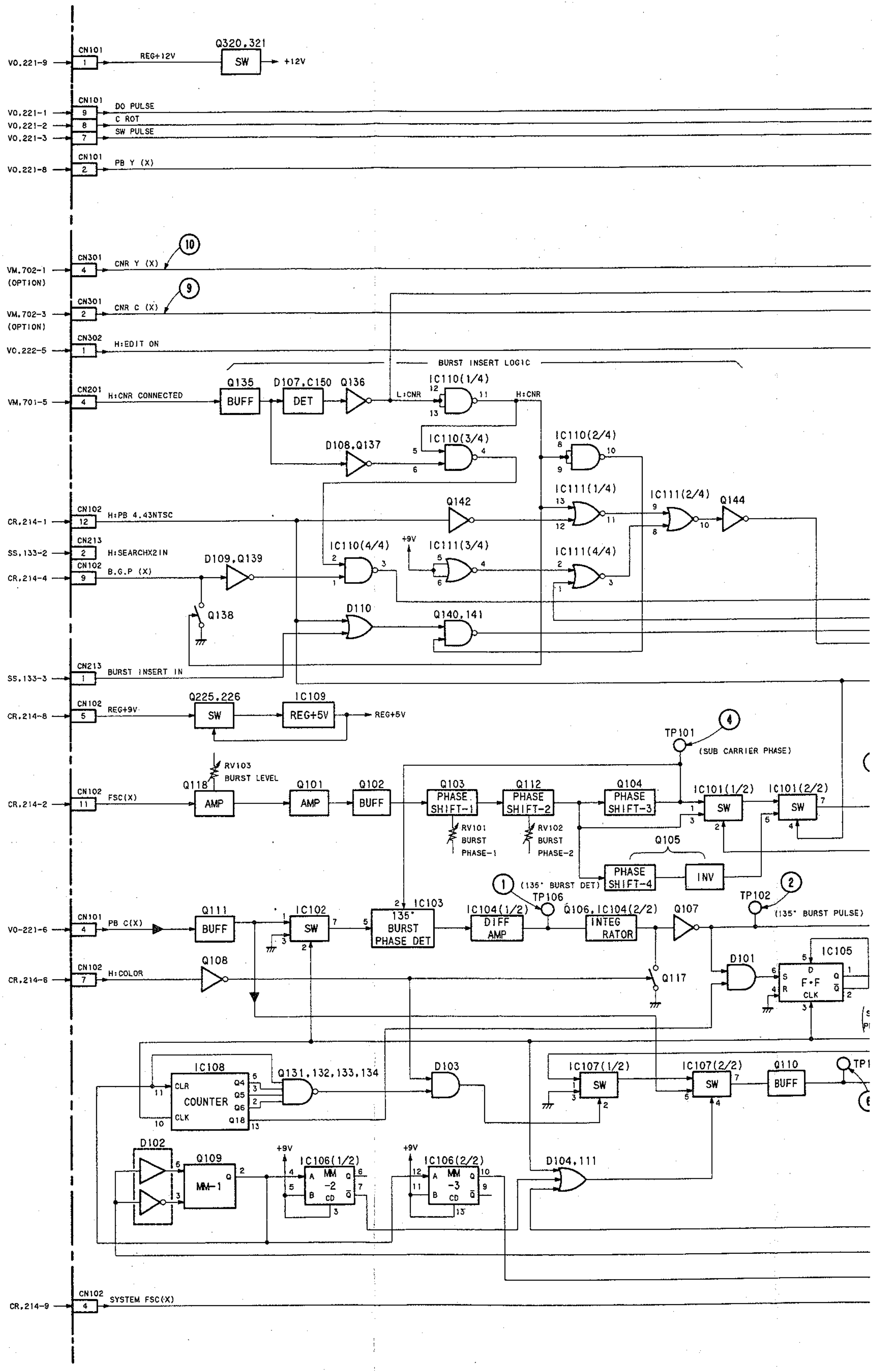
Measurement Condition

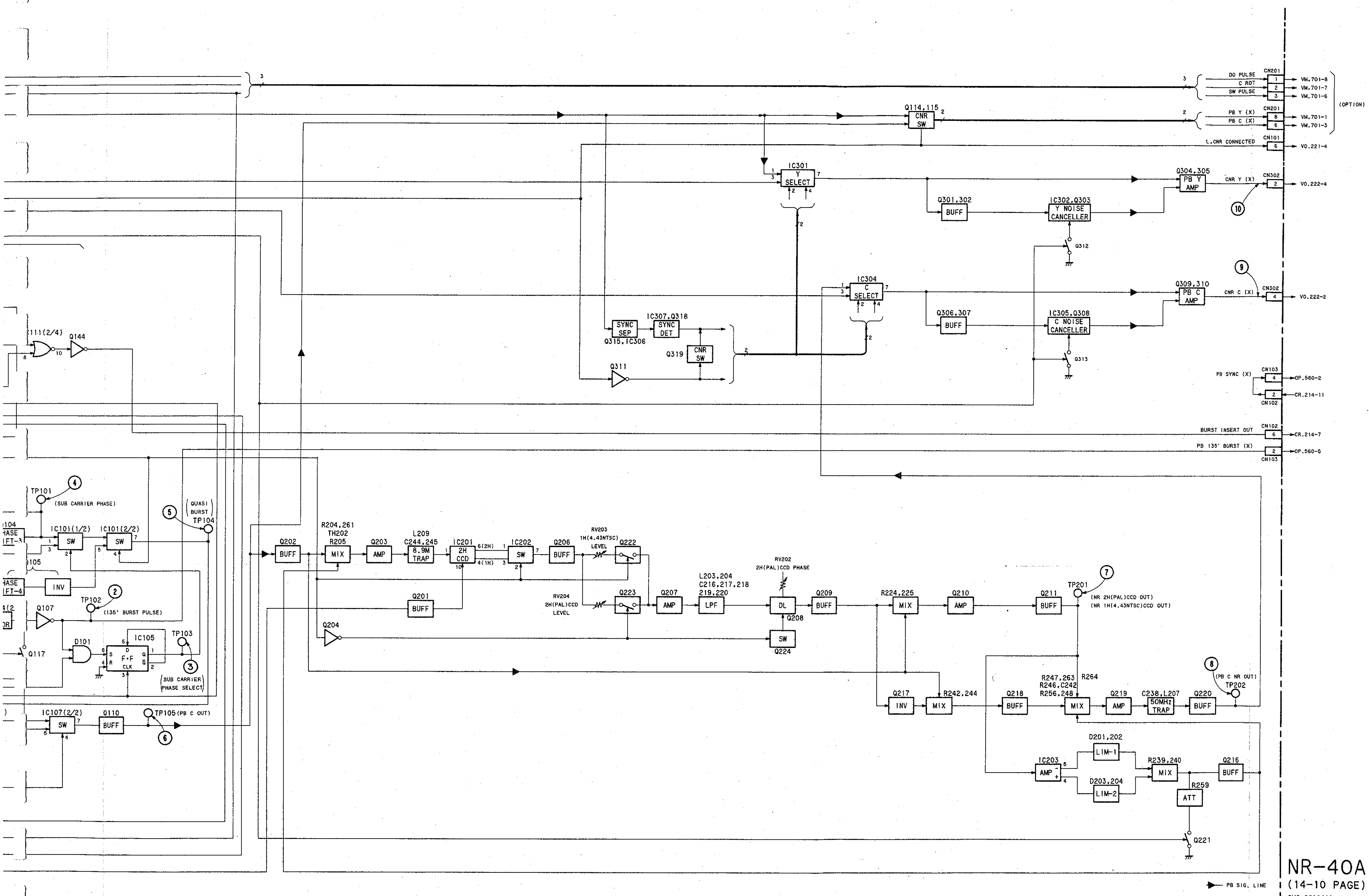
PB mode: KRV-45HPS

*dnr- on (Refer to Menu Items.)

SVBK-150 board is mounted.

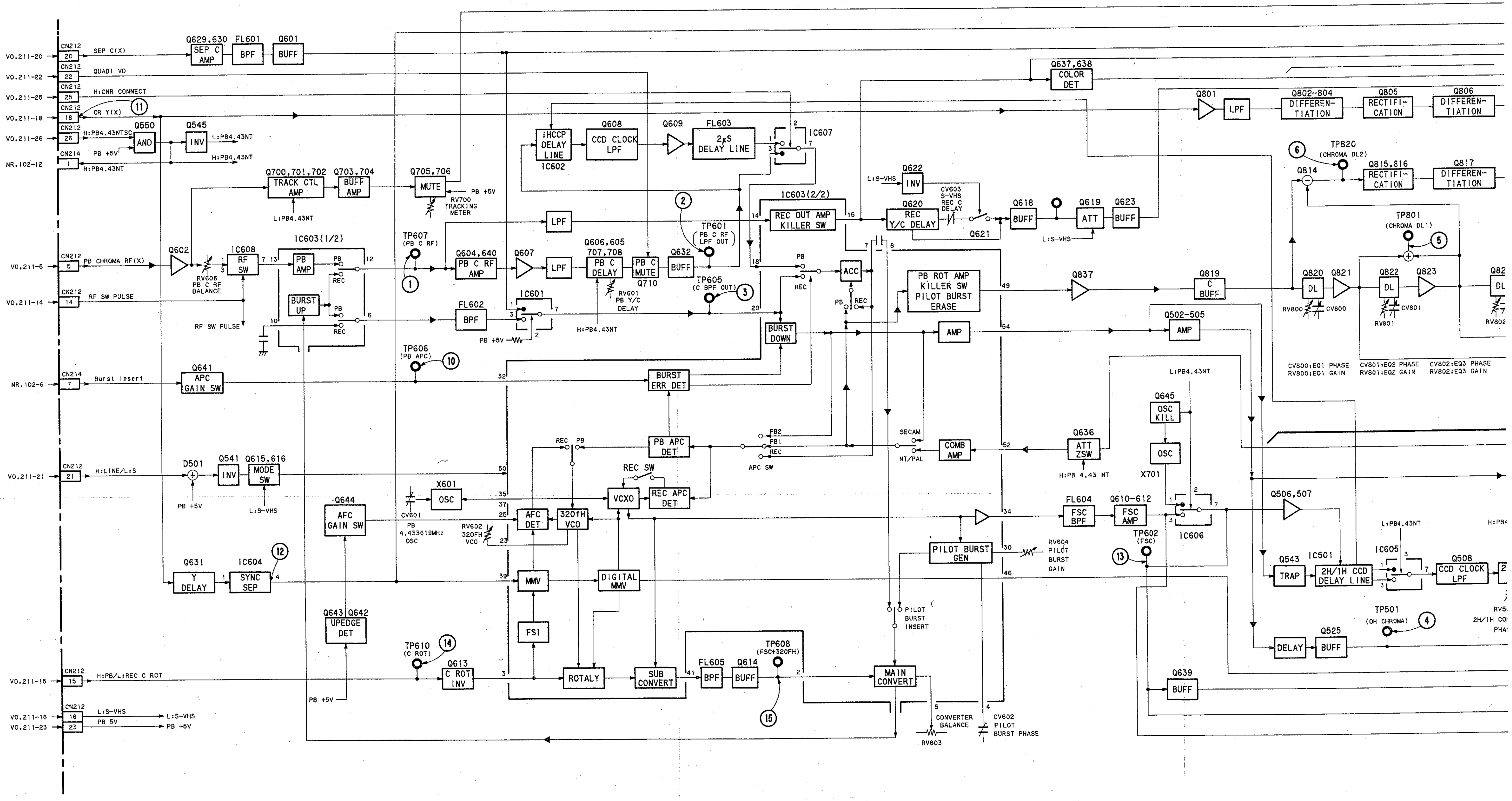


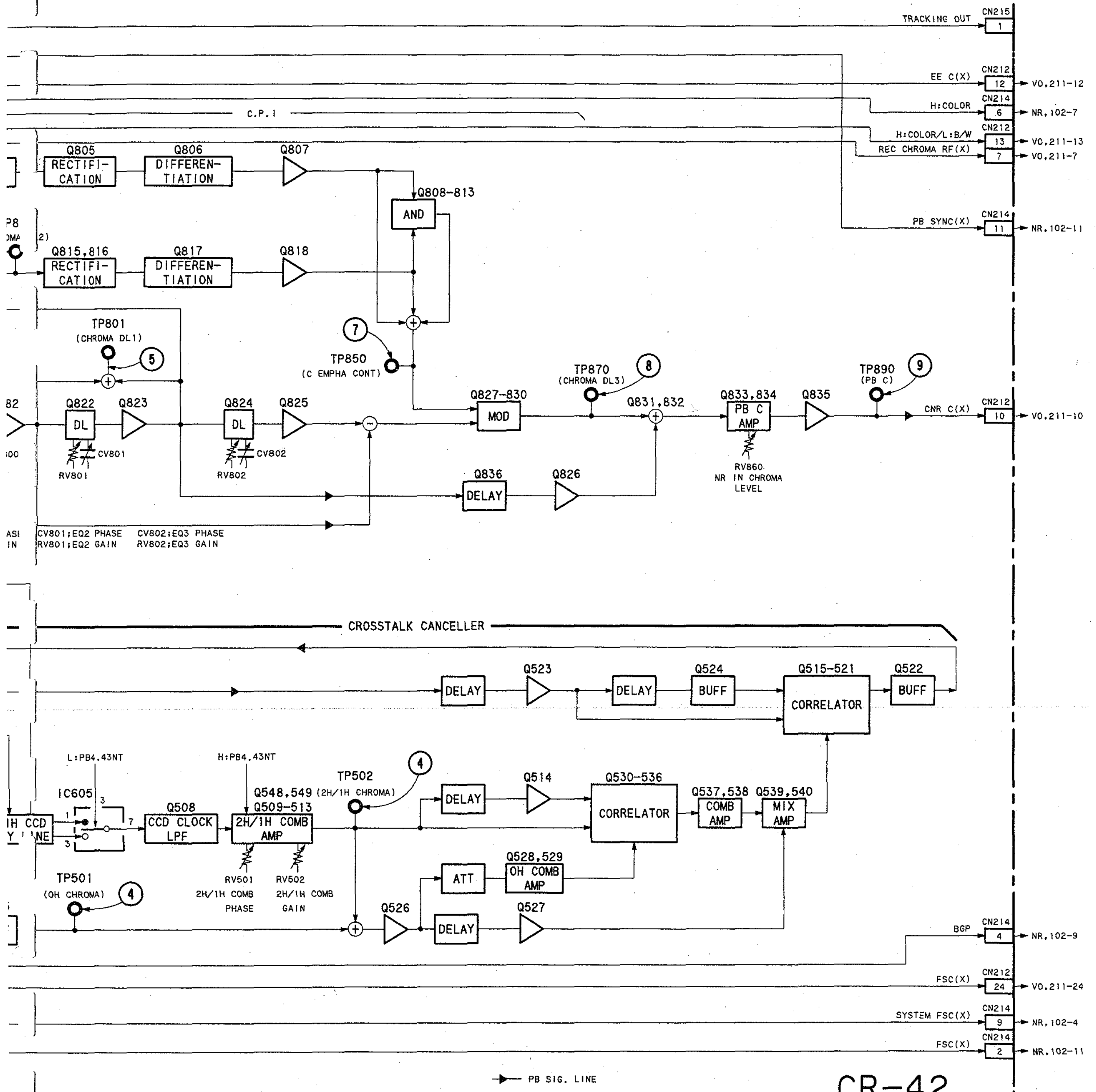

VO.221-9
CN101
REG+12V
Q320,321
SW
+12V
VO.221-1
VO.221-2
VO.221-3
DO PULSE
C ROT
SW PULSE
VO.221-8
PB Y (X)
VM.702-1 (OPTION)
CN301
CNR Y (X)
VM.702-3 (OPTION)
CNR C (X)
VC.222-5
CN302
H:EDIT ON
BURST INSERT LOGIC
VM.701-5
CN201
H:CNR CONNECTED
Q135
BUFF
D107,C150
DET
Q136
L:CNR
IC110(1/4)
H:CNR
IC110(3/4)
D108,Q137
IC110(2/4)
IC111(1/4)
IC111(2/4)
Q144
Q142
CR.214-1
CN102
H:PB 4.43NTSC
SS.133-2
CN213
H:SEARCHX2IN
CR.214-4
B.G.P (X)
D109,Q139
IC110(4/4)
IC111(3/4)
IC111(4/4)
Q138
D110
Q140,141
SS.133-3
BURST INSERT IN
CR.214-8
REG+9V
Q225,226
SW
IC109
REG+5V
TP101
(SUB CARRIER PHASE)
CR.214-2
FSC(X)
RV103 BURST LEVEL
Q118
AMP
Q101
AMP
Q102
BUFF
Q103
PHASE SHIFT-1
Q112
PHASE SHIFT-2
Q104
PHASE SHIFT-3
IC101(1/2)
SW
IC101(2/2)
SW
RV101 BURST PHASE-1
RV102 BURST PHASE-2
Q105
PHASE SHIFT-4
INV
(135° BURST DET)
TP106
TP102
(135° BURST PULSE)
VO-221-6
PB C(X)
Q111
BUFF
IC102
SW
IC103
135° BURST PHASE DET
IC104(1/2)
DIFF AMP
Q106,IC104(2/2)
INTEG RATOR
Q107
CR.214-6
H:COLOR
Q108
Q117
D101
IC105
F-F
IC108
COUNTER
CLR
CLK
Q131,132,133,134
D103
IC107(1/2)
SW
IC107(2/2)
SW
Q110
BUFF
D102
Q109
MM-1
IC106(1/2)
MM -2
IC106(2/2)
MM -3
D104,111
+9V
CR.214-9
SYSTEM FSC(X)


3
DO PULSE
C ROT
SW PULSE
CN201
1
2
3
VM.701-8
VM.701-7
VM.701-6
(OPTION)
Q114,115
CNR
SW
2
PB Y (X)
PB C (X)
CN201
8
6
VM.701-1
VM.701-3
L.CNR CONNECTED
CN101
6
V0.221-4
IC301
Y
SELECT
1
3
7
2
4
Q304,305
PB Y
AMP
CNR Y (X)
CN302
2
V0.222-4
⑩
Q301,302
BUFF
IC302,Q303
Y NOISE
CANCELLER
Q312
⑨
IC304
C
SELECT
Q309,310
PB C
AMP
CNR C (X)
CN302
4
V0.222-2
Q306,307
BUFF
IC305,Q308
C NOISE
CANCELLER
Q313
SYNC
SEP
Q315,IC306
IC307,Q318
SYNC
DET
Q319
CNR
SW
Q311
PB SYNC (X)
CN103
4
OP.560-2
2
CR.214-11
CN102
BURST INSERT OUT
CN102
6
CR.214-7
PB 135° BURST (X)
2
OP.560-5
CN103
IC111(2/4)
Q144
8
10
TP101
④
(SUB CARRIER PHASE)
⑤
(QUASI BURST)
TP104
IC101(1/2)
SW
IC101(2/2)
SW
104
HASE
IFT-3
105
HASE
IFT-4
INV
TP102
②
(135° BURST PULSE)
Q107
Q117
D101
IC105
F·F
S
R
D
Q
Q̄
CLK
TP103
③
(SUB CARRIER PHASE SELECT)
IC107(2/2)
SW
Q110
BUFF
TP105 (PB C OUT)
⑥
Q202
BUFF
R204,261
TH202
R205
MIX
Q203
AMP
L209
C244,245
8.9M
TRAP
IC201
2H
CCD
6(2H)
4(1H)
IC202
SW
Q206
BUFF
RV203
1H(4.43NTSC)
LEVEL
Q222
Q201
BUFF
Q204
RV204
2H(PAL)CCD
LEVEL
Q223
Q207
AMP
L203,204
C216,217,218
219,220
LPF
RV202
2H(PAL)CCD PHASE
DL
Q208
SW
Q224
Q209
BUFF
R224,225
MIX
Q210
AMP
Q211
BUFF
TP201
⑦
(NR 2H(PAL)CCD OUT)
(NR 1H(4.43NTSC)CCD OUT)
Q217
INV
MIX
R242,244
Q218
BUFF
R247,263
R246,C242
R256,248
R264
MIX
Q219
AMP
C238,L207
50MHz
TRAP
Q220
BUFF
⑧
(PB C NR OUT)
TP202
D201,202
LIM-1
IC203
AMP
D203,204
LIM-2
R239,240
MIX
Q216
BUFF
R259
ATT
Q221
PB SIG. LINE

NR-40A
(14-10 PAGE)
SVO-9620(1)
SVP-9020(1)

CHROMA PROCESS


VO.211-20
VO.211-22
VO.211-25
VO.211-18
VO.211-26
NR.102-12
VO.211-5
VO.211-14
NR.102-6
VO.211-21
VO.211-15
VO.211-16
VO.211-23
CN212
CN214
SEP C(X)
QUADI VD
H:CNR CONNECT
CR Y(X)
H:PB4.43NTSC
PB +5V
H:PB4.43NT
L:PB4.43NT
PB CHROMA RF(X)
RF SW PULSE
Burst Insert
H:LINE/L:S
H:PB/L:REC C ROT
L:S-VHS
PB 5V
Q629,630
SEP C AMP
FL601
BPF
Q601
BUFF
Q550
AND
Q545
INV
Q700,701,702
TRACK CTL AMP
Q703,704
BUFF AMP
Q705,706
MUTE
RV700 TRACKING METER
Q602
RV606 PB C RF BALANCE
IC608
RF SW
IC603(1/2)
PB AMP
BURST UP
PB
REC
TP607 (PB C RF)
Q604,640
PB C RF AMP
Q607
LPF
IC601
FL602
BPF
Q606,605 707,708
PB C DELAY
RV601 PB Y/C DELAY
H:PB4.43NT
PB C MUTE
Q710
Q632
BUFF
TP601 (PB C RF LPF OUT)
TP605 (C BPF OUT)
IHCCP DELAY LINE
IC602
Q608
CCD CLOCK LPF
Q609
FL603
2µS DELAY LINE
IC607
IC603(2/2)
REC OUT AMP KILLER SW
Q622
INV
Q620
REC Y/C DELAY
CV603 S-VHS REC C DELAY
Q621
Q618
BUFF
Q619
ATT
Q623
BUFF
L:S-VHS
Q637,638
COLOR DET
ACC
BURST DOWN
PB ROT AMP KILLER SW PILOT BURST ERASE
AMP
Q837
Q819
C BUFF
Q502-505
AMP
Q801
LPF
Q802-804
DIFFEREN-TIATION
Q805
RECTIFI-CATION
Q806
DIFFEREN-TIATION
TP820 (CHROMA DL2)
Q814
Q815,816
RECTIFI-CATION
Q817
DIFFEREN-TIATION
TP801 (CHROMA DL1)
Q820
Q821
Q822
Q823
DL
RV800
CV800
RV801
CV801
RV802
CV800:EQ1 PHASE
RV800:EQ1 GAIN
CV801:EQ2 PHASE
RV801:EQ2 GAIN
CV802:EQ3 PHASE
RV802:EQ3 GAIN
Q641
APC GAIN SW
TP606 (PB APC)
BURST ERR DET
PB APC DET
PB2
PB1
APC SW
SECAM
NT/PAL
COMB AMP
Q636
ATT ZSW
H:PB 4.43 NT
Q645
OSC KILL
OSC
X701
L:PB4.43NT
D501
Q541
INV
Q615,616
MODE SW
L:S-VHS
X601
OSC
CV601
PB 4.433619MHz OSC
RV602 320FH VCO
AFC DET
320fH VCO
VCXO
REC SW
REC APC DET
Q644
AFC GAIN SW
FL604
FSC BPF
Q610-612
FSC AMP
IC606
TP602 (FSC)
Q506,507
PILOT BURST GEN
RV604 PILOT BURST GAIN
Q631
Y DELAY
IC604
SYNC SEP
MMV
DIGITAL MMV
FSI
Q643 Q642
UPEDGE DET
TP610 (C ROT)
Q613
C ROT INV
ROTALY
SUB CONVERT
FL605
BPF
Q614
BUFF
TP608 (FSC+320FH)
PILOT BURST INSERT
MAIN CONVERT
CONVERTER BALANCE
RV603
CV602 PILOT BURST PHASE
Q543
TRAP
IC501
2H/1H CCD DELAY LINE
IC605
Q508
CCD CLOCK LPF
TP501 (OH CHROMA)
DELAY
Q525
BUFF
Q639
BUFF
L:PB4.43NT
H:PB
RV5
2H/1H CO
PHA
①
②
③
④
⑤
⑥
⑩
⑪
⑫
⑬
⑭
⑮


TRACKING OUT
CN215
1
EE C(X)
CN212
12
VO.211-12
H:COLOR
CN214
6
NR.102-7
C.P.I
H:COLOR/L:B/W
CN212
13
VO.211-13
REC CHROMA RF(X)
7
VO.211-7
Q805
RECTIFI-CATION
Q806
DIFFEREN-TIATION
Q807
Q808-813
AND
PB SYNC(X)
CN214
11
NR.102-11
Q815,816
RECTIFI-CATION
Q817
DIFFEREN-TIATION
Q818
TP801
(CHROMA DL1)
5
7
TP850
(C EMPHA CONT)
TP870
(CHROMA DL3)
8
TP890
(PB C)
9
Q822
DL
Q823
Q824
DL
Q825
Q827-830
MOD
Q831,832
Q833,834
PB C AMP
Q835
CNR C(X)
CN212
10
VO.211-10
CV801
RV801
CV802
RV802
Q836
DELAY
Q826
RV860
NR IN CHROMA LEVEL
CV801:EQ2 PHASE
RV801:EQ2 GAIN
CV802:EQ3 PHASE
RV802:EQ3 GAIN
CROSSTALK CANCELLER
DELAY
Q523
DELAY
Q524
BUFF
Q515-521
CORRELATOR
Q522
BUFF
L:PB4.43NT
H:PB4.43NT
IC605
1H CCD
Q508
CCD CLOCK LPF
Q548,549
Q509-513
2H/1H COMB AMP
TP502
(2H/1H CHROMA)
4
DELAY
Q514
Q530-536
CORRELATOR
Q537,538
COMB AMP
Q539,540
MIX AMP
TP501
(OH CHROMA)
4
RV501
2H/1H COMB PHASE
RV502
2H/1H COMB GAIN
ATT
Q528,529
OH COMB AMP
Q526
DELAY
Q527
BGP
CN214
4
NR.102-9
FSC(X)
CN212
24
VO.211-24
SYSTEM FSC(X)
CN214
9
NR.102-4
FSC(X)
CN214
2
NR.102-11
PB SIG. LINE

CR-42
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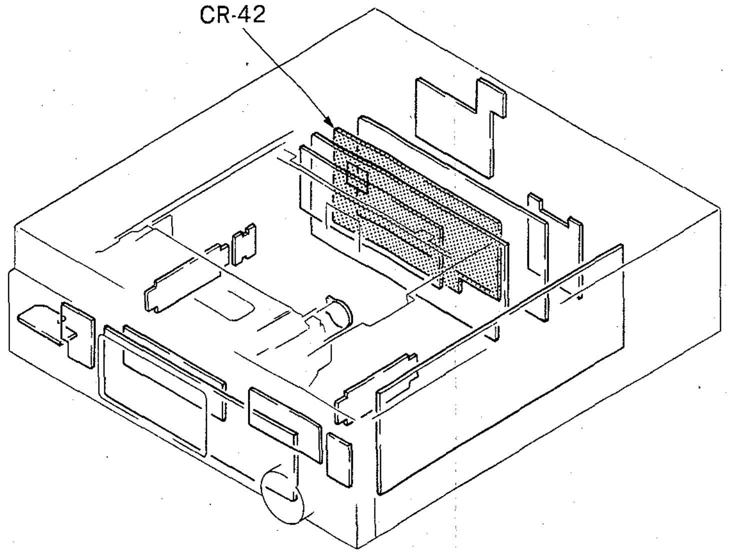
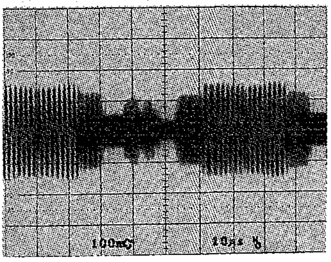
SVP-9020(1)

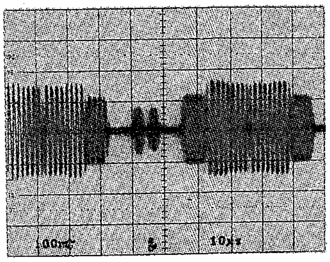


CHROMA PROCESS

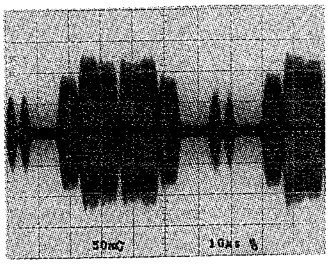
① TP607 (F-3∗) PB mode



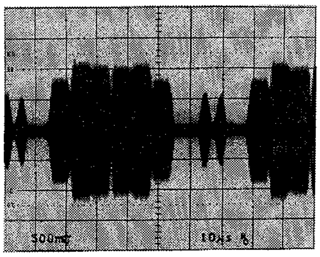
② TP601 (G-3∗) PB mode



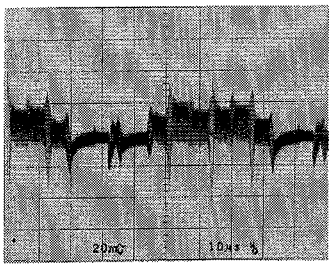
③ TP605 (H-2∗) PB mode



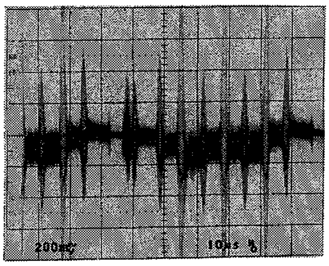
④ TP501 (C-3∗) PB mode
TP502 (A-4∗) PB mode



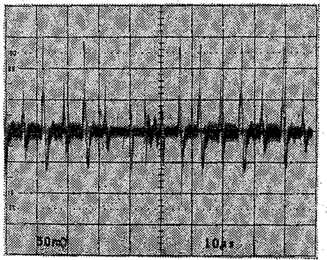
⑤ TP801 (D-1∗) PB mode



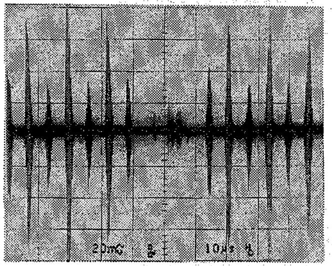
⑥ TP820 (A-1∗) PB mode



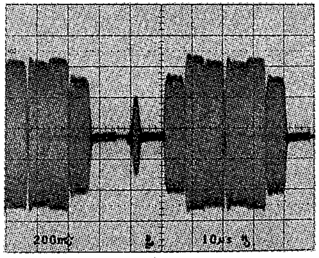
⑦ TP850 (C-1∗) PB mode



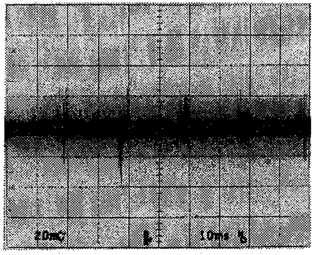
⑧ TP870 (C-1∗) PB mode



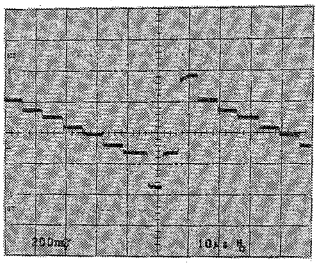
⑨ TP890 (E-1∗) PB mode



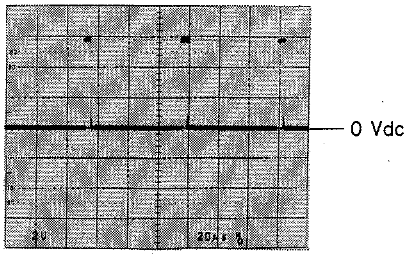
⑩ TP606 (F-1∗) PB mode



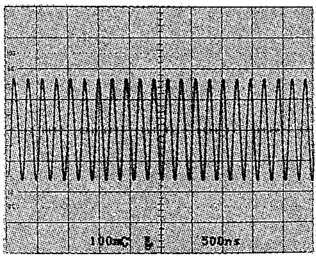
⑪ CN212 pin 18 (H-2) PB mode



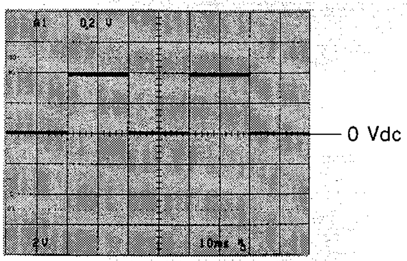
⑫ IC604 pin 4 (F-1)



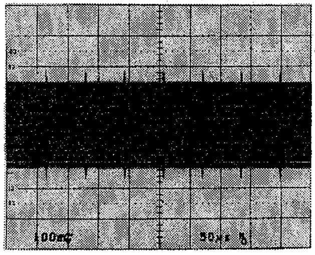
⑬ TP602 (H-2∗)



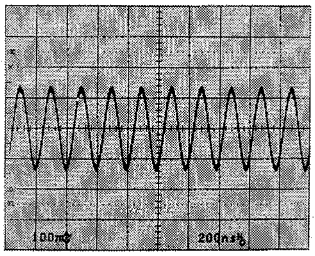
⑭ TP610 (E-3∗) PB mode



⑮ TP608 (F-3∗)



TP608 (F-3∗) (fsc part)



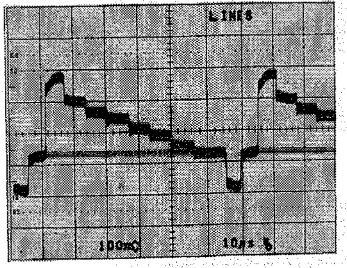
Measurement Condition

PB mode: KRV-45HPS

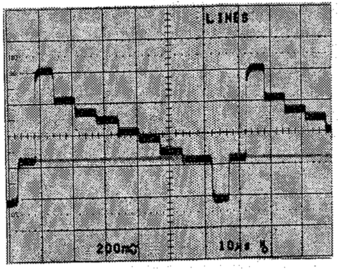
∗ mark; B SIDE mount

Y/C VIDEO PROCESS

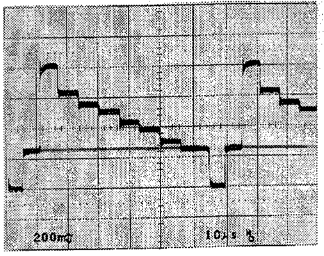
① TP203 (G-5 ∗) PB mode



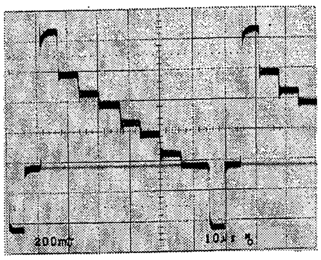
② TP201 (E-5 ∗) PB mode



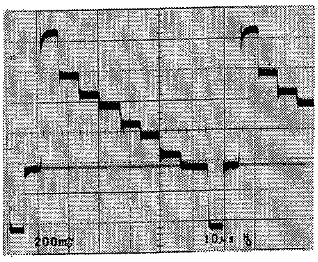
③ TP301 (C-5 ∗) PB mode



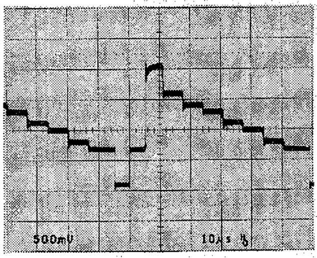
④ TP302 (A-5 ∗) PB mode



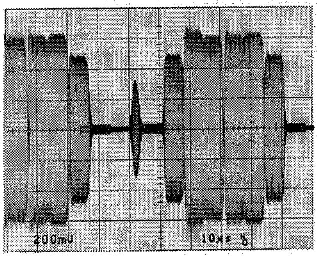
⑤ TP304 (D-2 ∗) PB mode



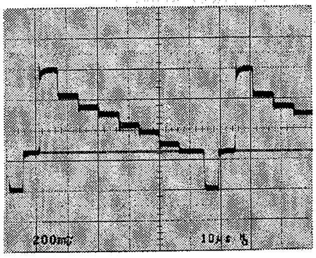
⑥ TP492 (G-1 ∗) PB mode



⑦ TP491 (H-1 ∗) PB mode



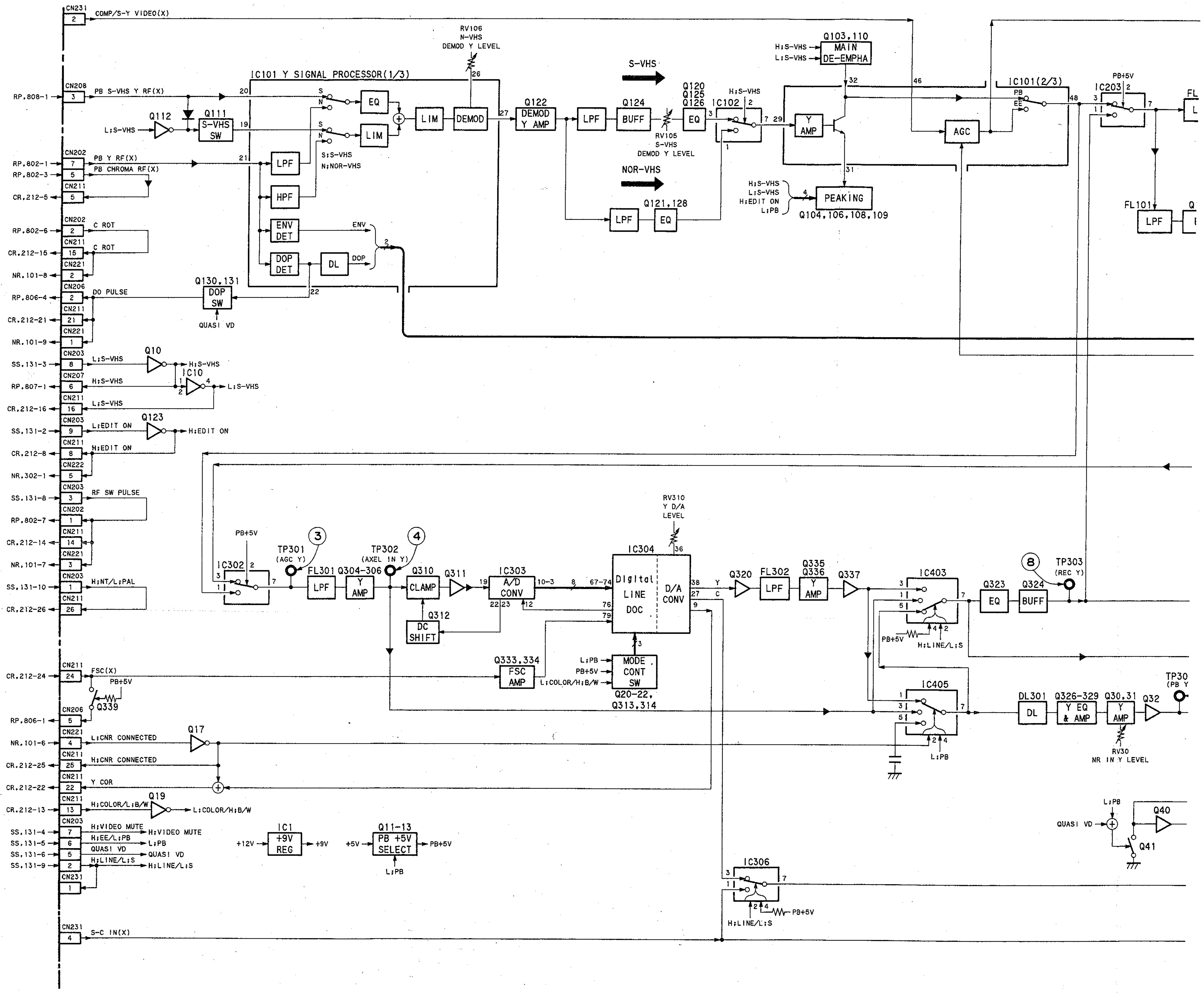
⑧ TP303 (D-3 ∗) PB mode

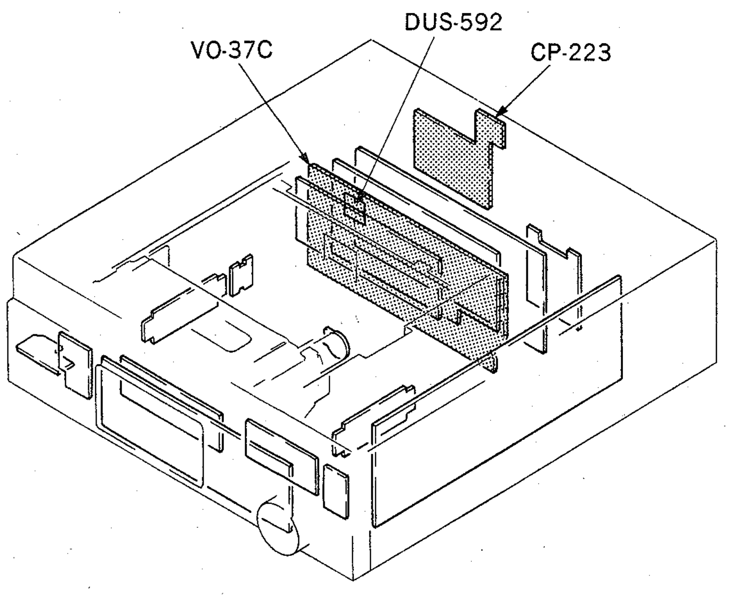


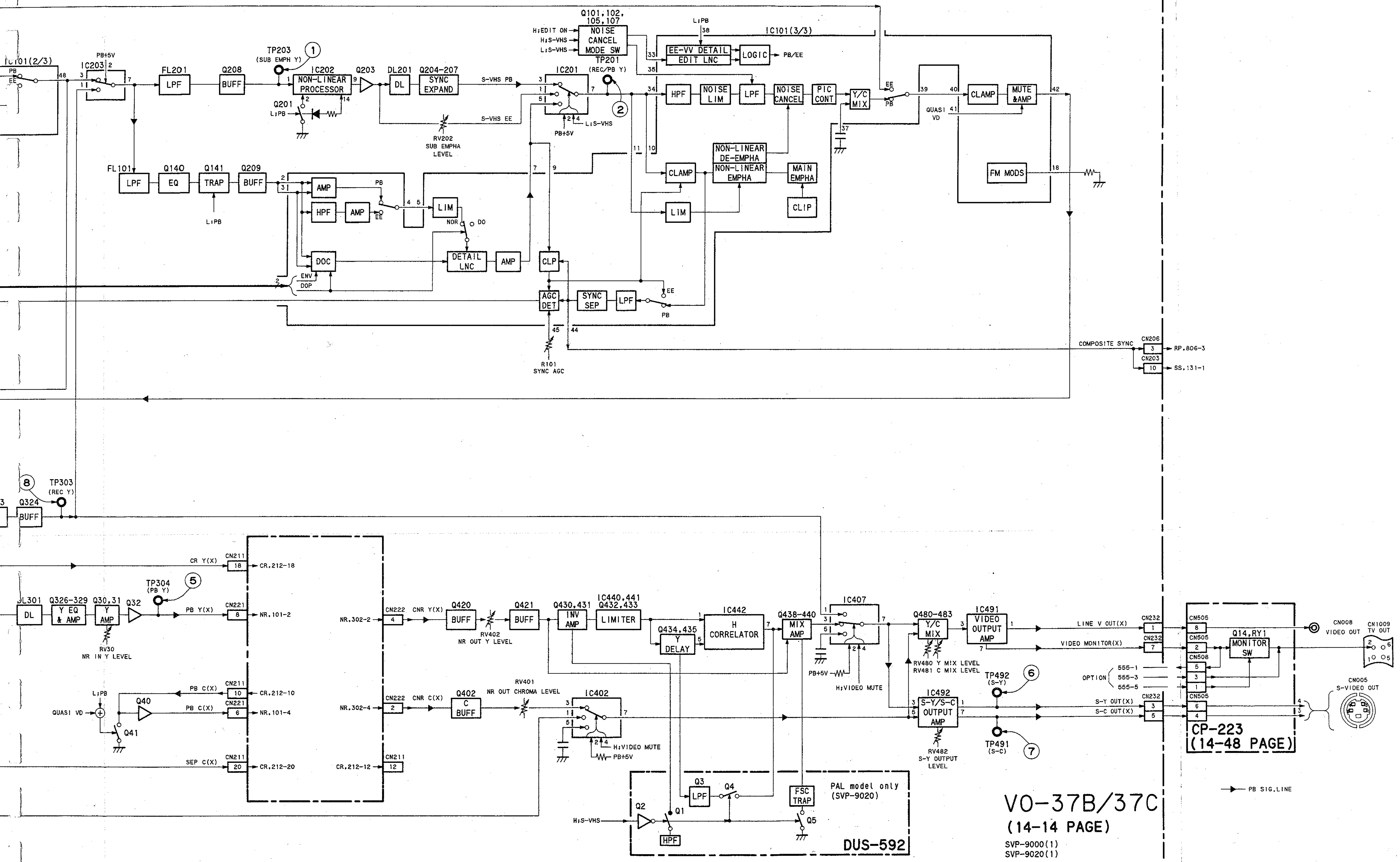
Measurement Condition
PB mode: KRV-45HPS

∗ mark; B SIDE mount

Y/C VIDEO PROCESS

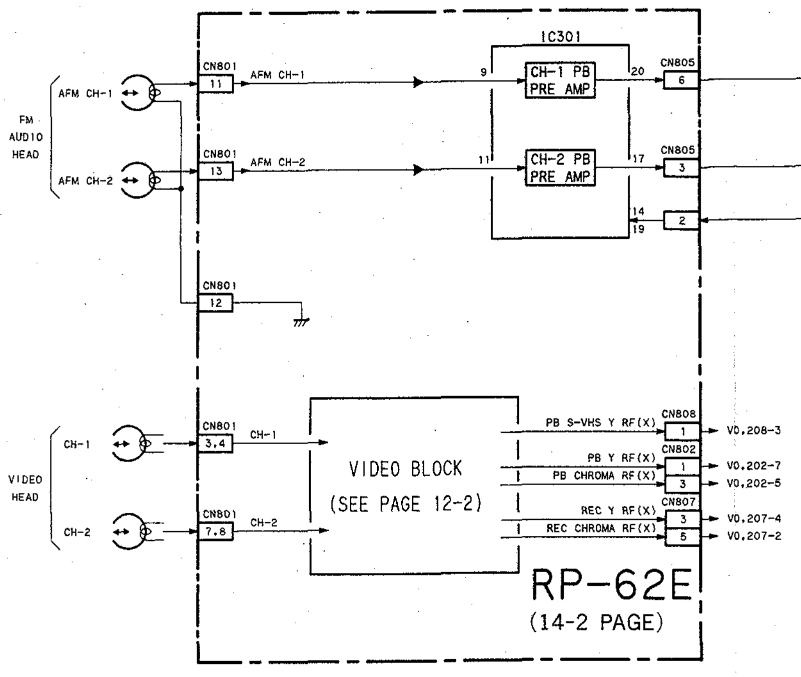

CN231 2 COMP/S-Y VIDEO(X)
CN208 3 PB S-VHS Y RF(X)
RP.808-1
Q112
L:S-VHS
Q111 S-VHS SW
IC101 Y SIGNAL PROCESSOR(1/3)
RV106 N-VHS DEMOD Y LEVEL
EQ
LIM
DEMOD
S:S-VHS N:NOR-VHS
CN202 7 PB Y RF(X)
5 PB CHROMA RF(X)
RP.802-1
RP.802-3
CR.212-5
LPF
HPF
ENV DET
DOP DET
DL
ENV
DOP
C ROT
RP.802-6
CR.212-15
NR.101-8
DO PULSE
RP.806-4
Q130,131 DOP SW
QUASI VD
CR.212-21
NR.101-9
Q122 DEMOD Y AMP
LPF
Q124 BUFF
RV105 S-VHS DEMOD Y LEVEL
Q120 Q125 Q126 EQ
IC102
H:S-VHS
S-VHS
NOR-VHS
Q121,128 EQ
Y AMP
Q103,110 MAIN DE-EMPHA
H:S-VHS L:S-VHS
PEAKING
H:S-VHS L:S-VHS H:EDIT ON L:PB
Q104,106,108,109
AGC
IC101(2/3)
PB EE
PB+5V
IC203
FL101
LPF
SS.131-3
Q10
L:S-VHS
H:S-VHS
IC10
RP.807-1
CR.212-16
SS.131-2
Q123
L:EDIT ON
H:EDIT ON
CR.212-8
NR.302-1
SS.131-8
RF SW PULSE
RP.802-7
CR.212-14
NR.101-7
SS.131-10
H:NT/L:PAL
CR.212-26
PB+5V
IC302
TP301 (AGC Y)
③
FL301 LPF
Q304-306 Y AMP
TP302 (AXEL IN Y)
④
Q310 CLAMP
Q311
IC303 A/D CONV
Q312 DC SHIFT
RV310 Y D/A LEVEL
IC304
Digital LINE DOC
D/A CONV
Q333,334 FSC AMP
L:PB PB+5V L:COLOR/H:B/W
MODE CONT SW
Q20-22, Q313,314
Q320
FL302 LPF
Q335 Q336 Y AMP
Q337
IC403
H:LINE/L:S
Q323 EQ
Q324 BUFF
⑧
TP303 (REC Y)
IC405
L:PB
DL301 DL
Q326-329 Y EQ & AMP
Q30,31 Y AMP
RV30 NR IN Y LEVEL
Q32
TP30 (PB Y
CR.212-24
FSC(X)
Q339
RP.806-1
NR.101-6
Q17
L:CNR CONNECTED
CR.212-25
H:CNR CONNECTED
CR.212-22
Y COR
CR.212-13
Q19
H:COLOR/L:B/W
L:COLOR/H:B/W
SS.131-4
H:VIDEO MUTE
SS.131-5
H:EE/L:PB
L:PB
SS.131-6
QUASI VD
SS.131-9
H:LINE/L:S
IC1 +9V REG
+12V +9V
Q11-13 PB +5V SELECT
+5V PB+5V
L:PB
Q40
Q41
IC306
H:LINE/L:S
CN231 4 S-C IN(X)

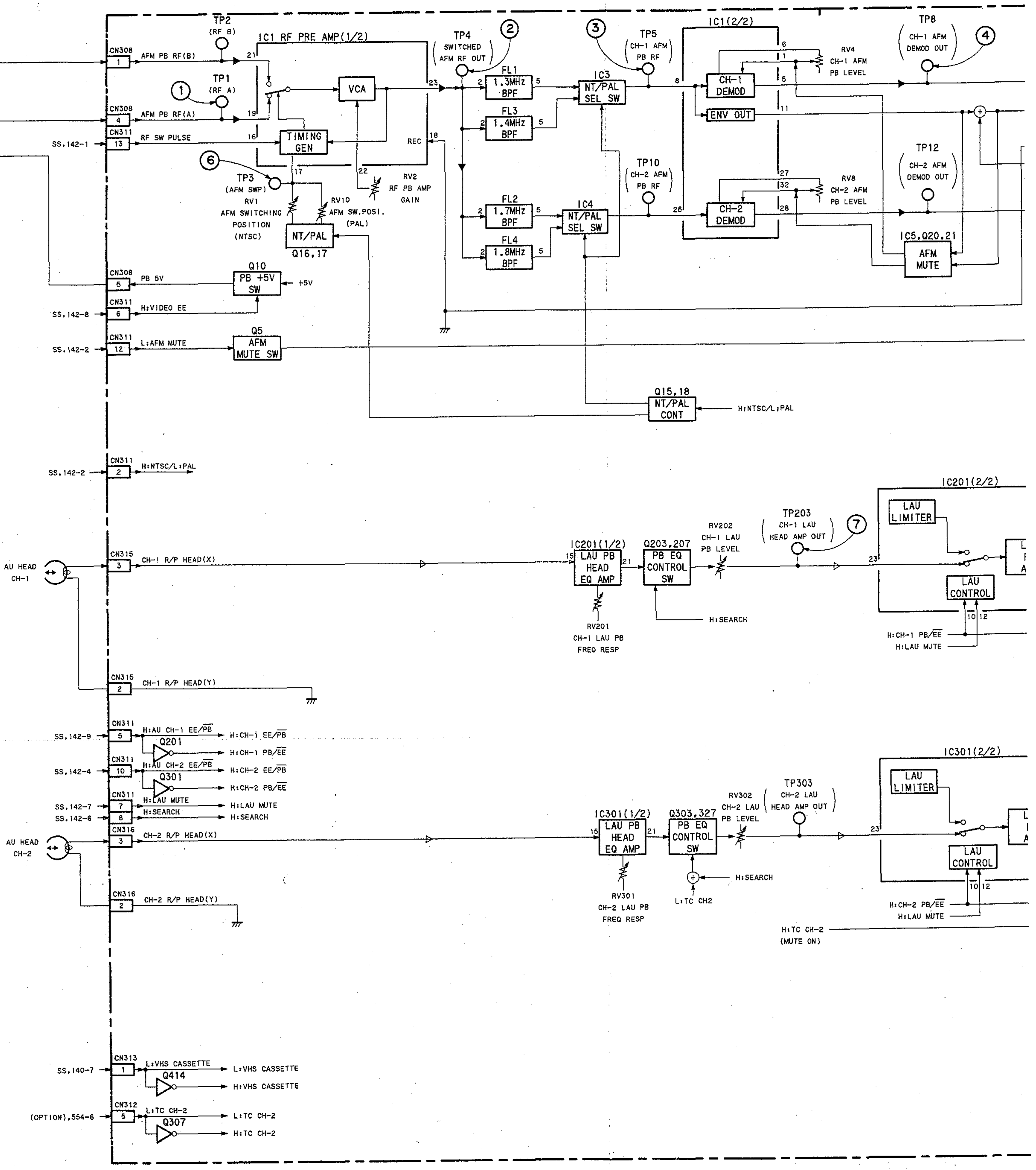

VO-37C
DUS-592
CP-223

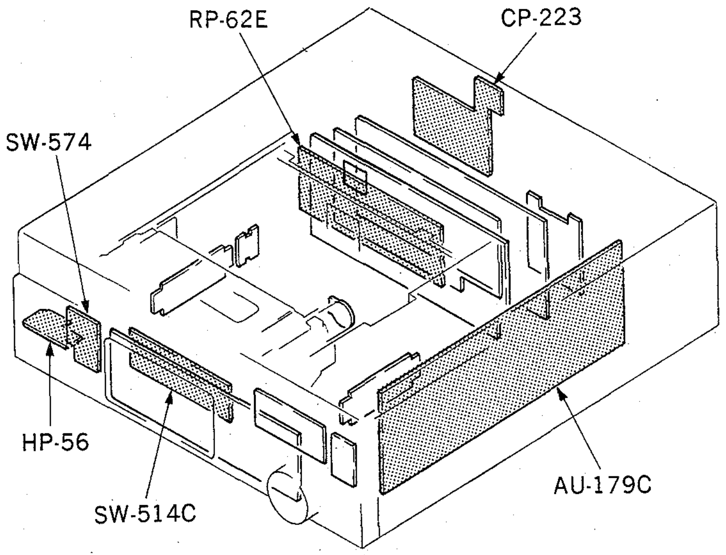

IC101(2/3)
PB
EE
48
IC203
PB+5V
FL201
LPF
Q208
BUFF
TP203
(SUB EMPH Y)
①
IC202
NON-LINEAR PROCESSOR
Q201
L:PB
Q203
DL201
DL
Q204-207
SYNC EXPAND
S-VHS PB
S-VHS EE
RV202
SUB EMPHA LEVEL
Q101,102,105,107
H:EDIT ON
H:S-VHS
L:S-VHS
NOISE CANCEL MODE SW
TP201
(REC/PB Y)
②
IC201
PB+5V
L:S-VHS
L:PB
IC101(3/3)
EE-VV DETAIL
EDIT LNC
LOGIC
PB/EE
HPF
NOISE LIM
LPF
NOISE CANCEL
PIC CONT
Y/C MIX
CLAMP
MUTE &AMP
QUASI VD
FM MODS
NON-LINEAR DE-EMPHA
NON-LINEAR EMPHA
MAIN EMPHA
CLIP
CLAMP
LIM
FL101
LPF
Q140
EQ
Q141
TRAP
Q209
BUFF
L:PB
AMP
HPF
AMP
LIM
NOR
DO
DOC
DETAIL LNC
AMP
CLP
ENV
DOP
AGC DET
SYNC SEP
LPF
EE
PB
R101
SYNC AGC
COMPOSITE SYNC
CN206
RP.806-3
CN203
SS.131-1
⑧
TP303
(REC Y)
Q324
BUFF
CR Y(X)
CN211
CR.212-18
DL301
DL
Q326-329
Y EQ & AMP
Q30,31
Y AMP
Q32
TP304
(PB Y)
⑤
PB Y(X)
CN221
NR.101-2
RV30
NR IN Y LEVEL
NR.302-2
CN222
CNR Y(X)
Q420
BUFF
RV402
NR OUT Y LEVEL
Q421
BUFF
Q430,431
INV AMP
IC440,441
Q432,433
LIMITER
Q434,435
Y DELAY
IC442
H CORRELATOR
Q438-440
MIX AMP
IC407
PB+5V
H:VIDEO MUTE
Q480-483
Y/C MIX
RV480 Y MIX LEVEL
RV481 C MIX LEVEL
IC491
VIDEO OUTPUT AMP
LINE V OUT(X)
VIDEO MONITOR(X)
CN232
CN505
CN508
Q14,RY1
MONITOR SW
CN008
VIDEO OUT
CN1009
TV OUT
OPTION
555-1
555-3
555-5
TP492
(S-Y)
⑥
IC492
S-Y/S-C OUTPUT AMP
S-Y OUT(X)
S-C OUT(X)
RV482
S-Y OUTPUT LEVEL
TP491
(S-C)
⑦
CN005
S-VIDEO OUT
CP-223
(14-48 PAGE)
L:PB
PB C(X)
CN211
CR.212-10
QUASI VD
Q40
PB C(X)
NR.101-4
Q41
SEP C(X)
CR.212-20
NR.302-4
CNR C(X)
Q402
C BUFF
RV401
NR OUT CHROMA LEVEL
IC402
H:VIDEO MUTE
PB+5V
CR.212-12
Q2
H:S-VHS
Q1
HPF
Q3
LPF
Q4
FSC TRAP
Q5
PAL model only
(SVP-9020)
DUS-592
PB SIG.LINE

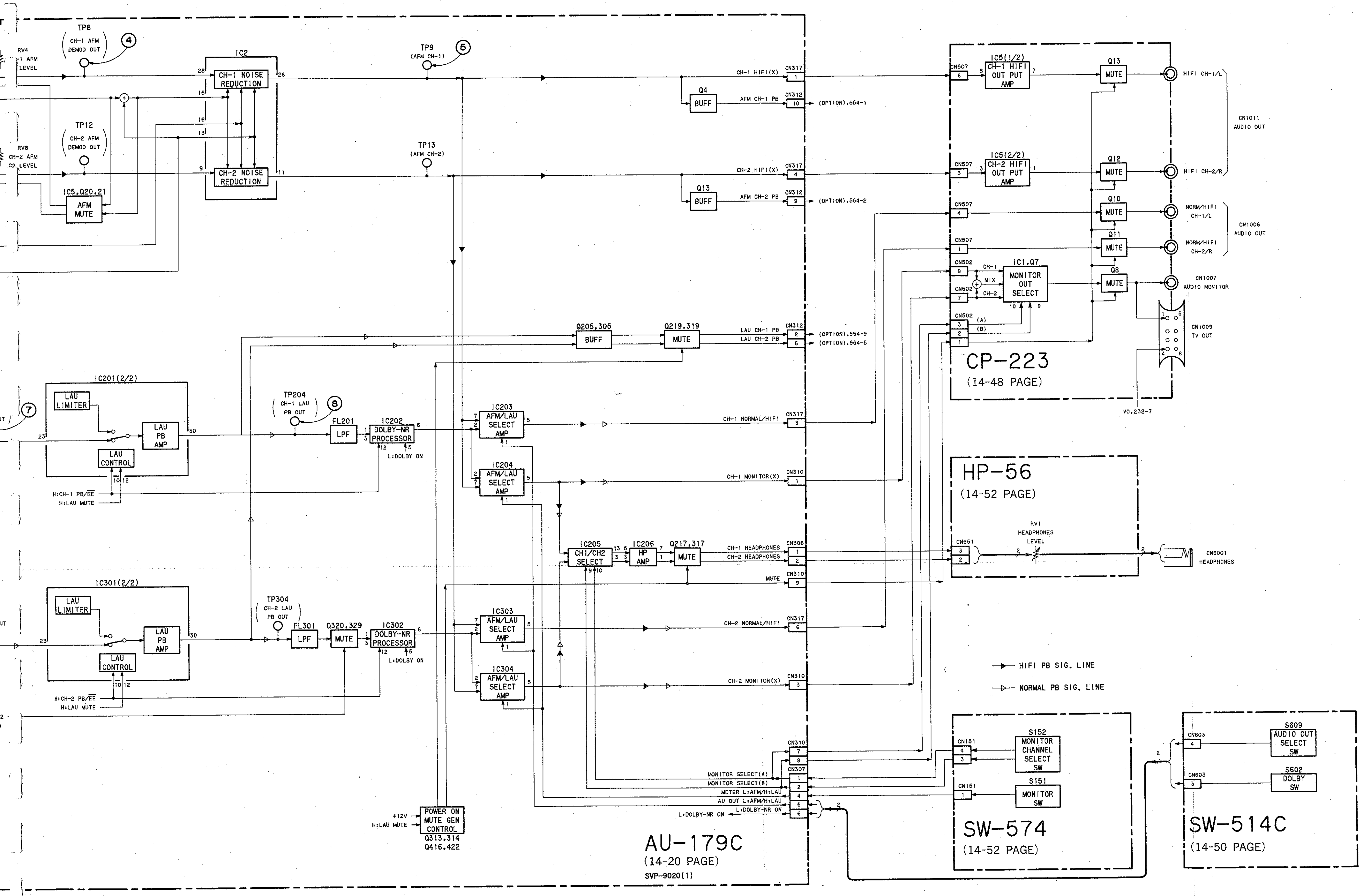
VO-37B/37C
(14-14 PAGE)
SVP-9000(1)
SVP-9020(1)

AFM PROCESS/NORMAL AUDIO PROCESS


IC301
FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
AFM CH-1
AFM CH-2
CH-1 PB PRE AMP
CH-2 PB PRE AMP
CN805
VIDEO HEAD
CH-1
CH-2
VIDEO BLOCK (SEE PAGE 12-2)
PB S-VHS Y RF(X)
PB Y RF(X)
PB CHROMA RF(X)
REC Y RF(X)
REC CHROMA RF(X)
CN808
CN802
CN807
VD,208-3
VD,202-7
VD,202-5
VD,207-4
VD,207-2
RP-62E
(14-2 PAGE)

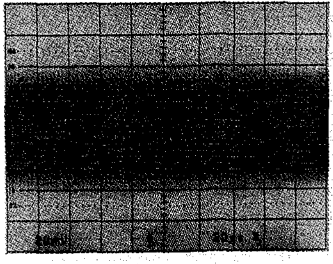

CN308
AFM PB RF(B)
AFM PB RF(A)
CN311
RF SW PULSE
SS,142-1
TP2 (RF B)
TP1 (RF A)
IC1 RF PRE AMP(1/2)
VCA
TIMING GEN
TP3 (AFM SWP)
RV1 AFM SWITCHING POSITION (NTSC)
RV10 AFM SW.POSI. (PAL)
NT/PAL
Q16,17
RV2 RF PB AMP GAIN
REC
TP4 SWITCHED AFM RF OUT
FL1 1.3MHz BPF
FL3 1.4MHz BPF
FL2 1.7MHz BPF
FL4 1.8MHz BPF
IC3 NT/PAL SEL SW
IC4 NT/PAL SEL SW
TP5 CH-1 AFM PB RF
TP10 CH-2 AFM PB RF
IC1(2/2)
CH-1 DEMOD
ENV OUT
CH-2 DEMOD
RV4 CH-1 AFM PB LEVEL
RV8 CH-2 AFM PB LEVEL
TP8 CH-1 AFM DEMOD OUT
TP12 CH-2 AFM DEMOD OUT
IC5,Q20,21 AFM MUTE
PB 5V
Q10 PB +5V SW
+5V
H:VIDEO EE
SS,142-8
L:AFM MUTE
SS,142-2
Q5 AFM MUTE SW
Q15,18 NT/PAL CONT
H:NTSC/L:PAL
AU HEAD CH-1
CN315
CH-1 R/P HEAD(X)
CH-1 R/P HEAD(Y)
IC201(1/2) LAU PB HEAD EQ AMP
RV201 CH-1 LAU PB FREQ RESP
Q203,207 PB EQ CONTROL SW
RV202 CH-1 LAU PB LEVEL
TP203 CH-1 LAU HEAD AMP OUT
IC201(2/2)
LAU LIMITER
LAU CONTROL
H:SEARCH
H:CH-1 PB/EE
H:LAU MUTE
SS,142-9
H:AU CH-1 EE/PB
Q201
H:CH-1 EE/PB
H:CH-1 PB/EE
SS,142-4
H:AU CH-2 EE/PB
Q301
H:CH-2 EE/PB
H:CH-2 PB/EE
SS,142-7
SS,142-6
H:LAU MUTE
H:SEARCH
AU HEAD CH-2
CN316
CH-2 R/P HEAD(X)
CH-2 R/P HEAD(Y)
IC301(1/2) LAU PB HEAD EQ AMP
RV301 CH-2 LAU PB FREQ RESP
Q303,327 PB EQ CONTROL SW
L:TC CH2
RV302 CH-2 LAU PB LEVEL
TP303 CH-2 LAU HEAD AMP OUT
IC301(2/2)
H:CH-2 PB/EE
H:TC CH-2 (MUTE ON)
CN313
SS,140-7
L:VHS CASSETTE
Q414
H:VHS CASSETTE
CN312
(OPTION),564-6
L:TC CH-2
Q307
H:TC CH-2


RP-62E
CP-223
SW-574
HP-56
SW-514C
AU-179C

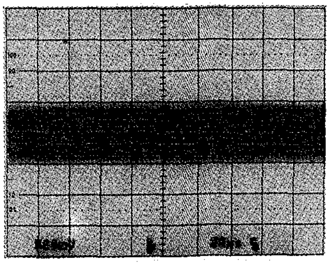

TP8
CH-1 AFM DEMOD OUT
④
RV4
-1 AFM LEVEL
IC2
CH-1 NOISE REDUCTION
CH-2 NOISE REDUCTION
TP9 (AFM CH-1)
⑤
TP13 (AFM CH-2)
TP12
CH-2 AFM DEMOD OUT
RV8
CH-2 AFM LEVEL
IC5,Q20,21
AFM MUTE
CH-1 HIFI(X)
CH-2 HIFI(X)
Q4
BUFF
AFM CH-1 PB
Q13
BUFF
AFM CH-2 PB
CN317
CN312
(OPTION),554-1
(OPTION),554-2
Q205,305
BUFF
Q219,319
MUTE
LAU CH-1 PB
LAU CH-2 PB
(OPTION),554-9
(OPTION),554-5
IC201(2/2)
LAU LIMITER
LAU PB AMP
LAU CONTROL
⑦
TP204
CH-1 LAU PB OUT
⑧
FL201
LPF
IC202
DOLBY-NR PROCESSOR
L:DOLBY ON
H:CH-1 PB/EE
H:LAU MUTE
IC203
AFM/LAU SELECT AMP
CH-1 NORMAL/HIFI
IC204
AFM/LAU SELECT AMP
CH-1 MONITOR(X)
CN310
IC205
CH1/CH2 SELECT
IC206
HP AMP
Q217,317
MUTE
CH-1 HEADPHONES
CH-2 HEADPHONES
CN306
MUTE
IC301(2/2)
LAU LIMITER
LAU PB AMP
LAU CONTROL
TP304
CH-2 LAU PB OUT
FL301
LPF
Q320,329
MUTE
IC302
DOLBY-NR PROCESSOR
L:DOLBY ON
H:CH-2 PB/EE
H:LAU MUTE
IC303
AFM/LAU SELECT AMP
CH-2 NORMAL/HIFI
IC304
AFM/LAU SELECT AMP
CH-2 MONITOR(X)
CN307
MONITOR SELECT(A)
MONITOR SELECT(B)
METER L:AFM/H:LAU
AU OUT L:AFM/H:LAU
L:DOLBY-NR ON
L:DOLBY-NR ON
+12V
H:LAU MUTE
POWER ON MUTE GEN CONTROL
Q313,314
Q416,422
AU-179C
(14-20 PAGE)
SVP-9020(1)
CN507
IC5(1/2)
CH-1 HIFI OUT PUT AMP
Q13
MUTE
HIFI CH-1/L
CN1011
AUDIO OUT
IC5(2/2)
CH-2 HIFI OUT PUT AMP
Q12
MUTE
HIFI CH-2/R
Q10
MUTE
NORM/HIFI CH-1/L
CN1006
AUDIO OUT
Q11
MUTE
NORM/HIFI CH-2/R
CN502
CH-1
MIX
CH-2
IC1,Q7
MONITOR OUT SELECT
Q8
MUTE
CN1007
AUDIO MONITOR
(A)
(B)
CN1009
TV OUT
CP-223
(14-48 PAGE)
VO,232-7
HP-56
(14-52 PAGE)
CN651
RV1
HEADPHONES LEVEL
CN6001
HEADPHONES
HIFI PB SIG. LINE
NORMAL PB SIG. LINE
CN151
S152
MONITOR CHANNEL SELECT SW
S151
MONITOR SW
SW-574
(14-52 PAGE)
CN603
S609
AUDIO OUT SELECT SW
S602
DOLBY SW
SW-514C
(14-50 PAGE)

AFM PROCESS/NORMAL AUDIO PROCESS

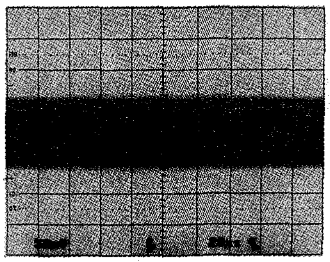
① TP1 (A-3) PB mode



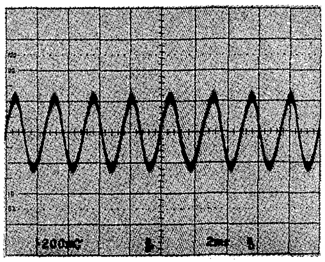
② TP4 (B-2) PB mode



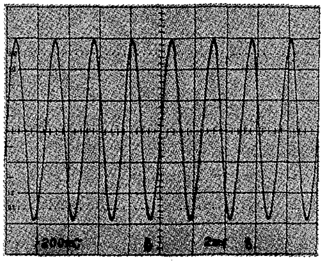
③ TP5 (A-2) PB mode



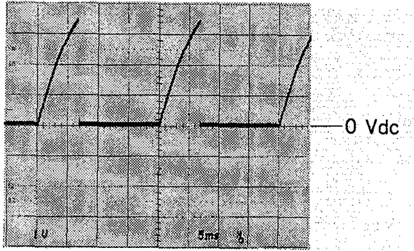
④ TP8 (D-1) PB mode



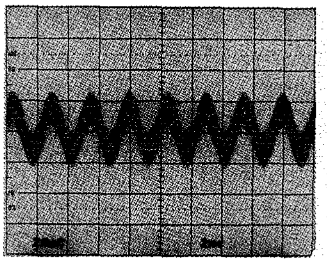
⑤ TP9 (D-1) PB mode



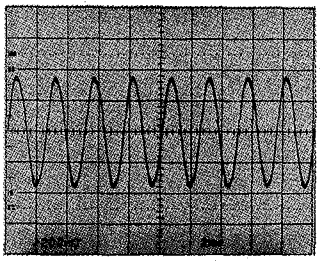
⑥ TP3 (A-3) PB mode



⑦ TP203 (I-4) PB mode



⑧ TP204 (I-3) PB mode

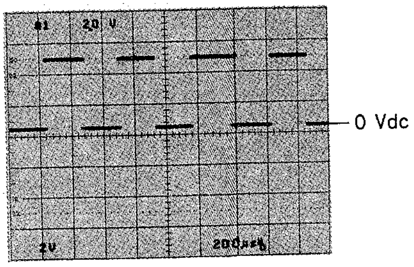


Measurement Condition

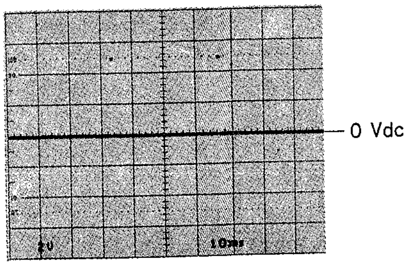
PB mode: KRV-45HPS (400Hz, Normal/HiFi)

SERVO & SYSTEM CONTROL

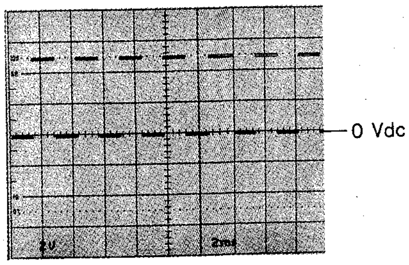
① TP103 (K-9) PB mode



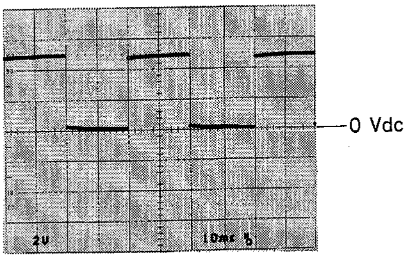
② TP104 (G-3) PB mode



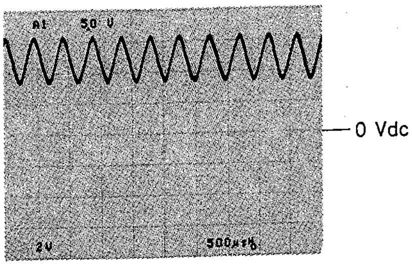
③ TP113 (G-3) PB mode



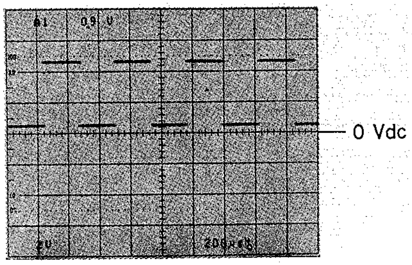
④ TP115



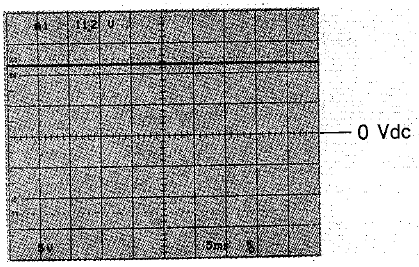
⑤ TP503 (K-9) PB mode



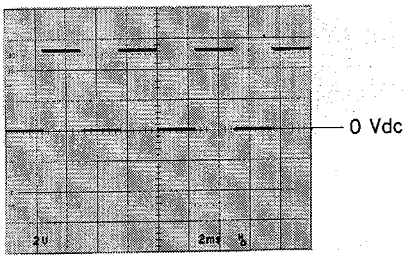
⑥ TP505 (K-9) PB mode



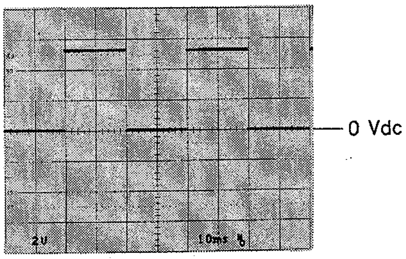
⑦ TP504 (K-9) PB mode



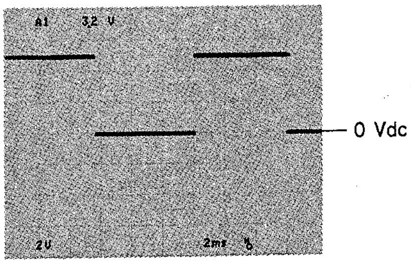
⑧ TP110 (G-8) PB mode



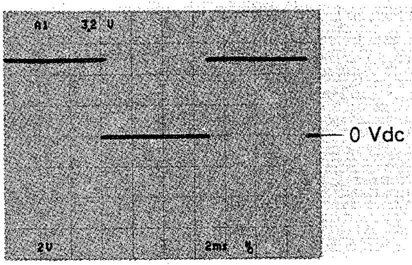
⑨ TP111 (L-7) PB mode



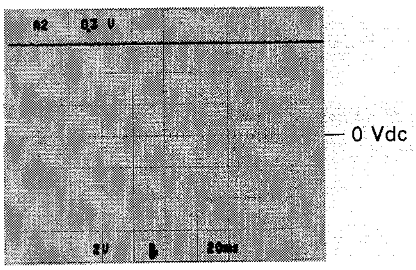
⑩ CN151-4pin (A-5/DUS-445) PB mode



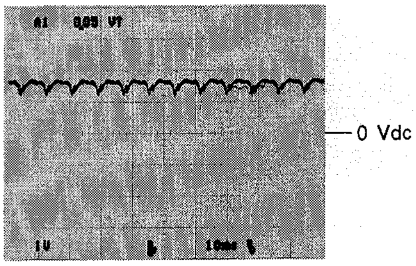
⑪ CN151-5pin (A-5/DUS-445) PB mode



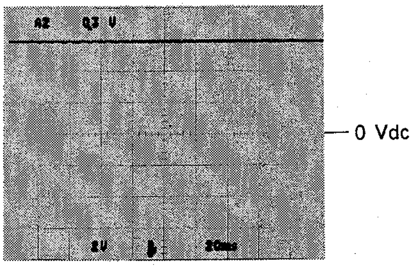
⑫ TP314 (C-2) PB mode



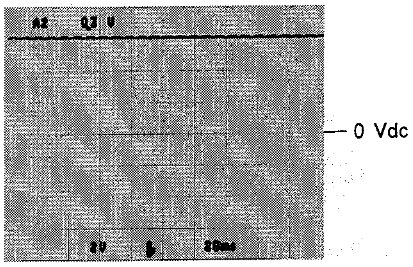
⑬ TP306 (B-2) PB mode



⑭ TP305 (B-3) PB mode

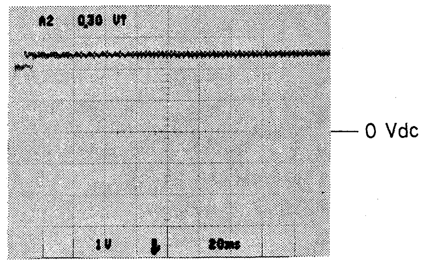


⑮ TP313 (D-3) PB mode

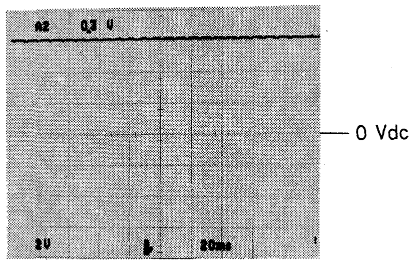


SERVO & SYSTEM CONTROL

⑯ TP308 (B-3) PB mode

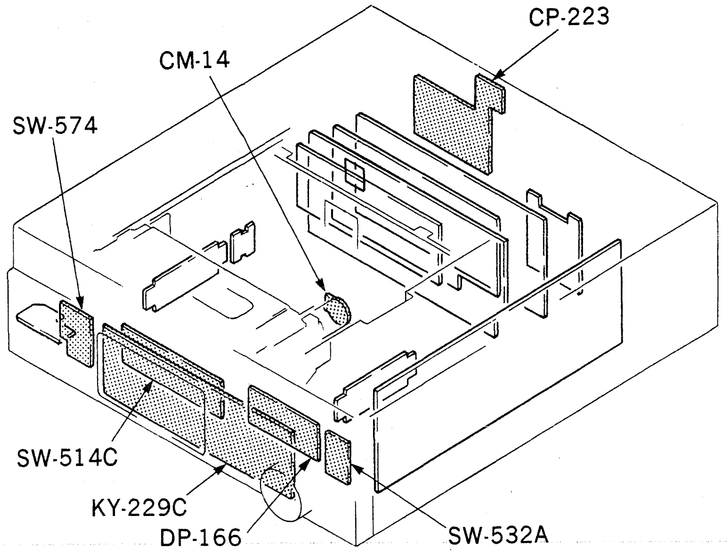


⑰ TP307 (C-2) PB mode



Measurement Condition

PB mode: KRV-45HPS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CM-14
SW-574
SW-514C
KY-229C
DP-166
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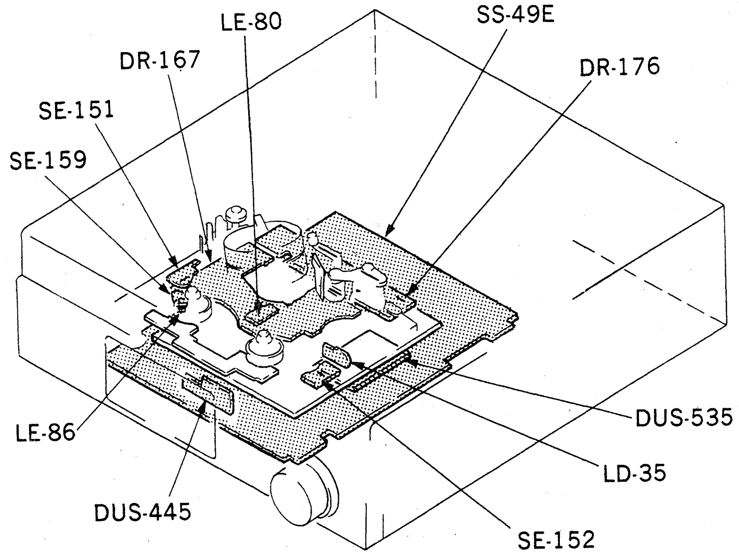
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SS-49E
DR-167
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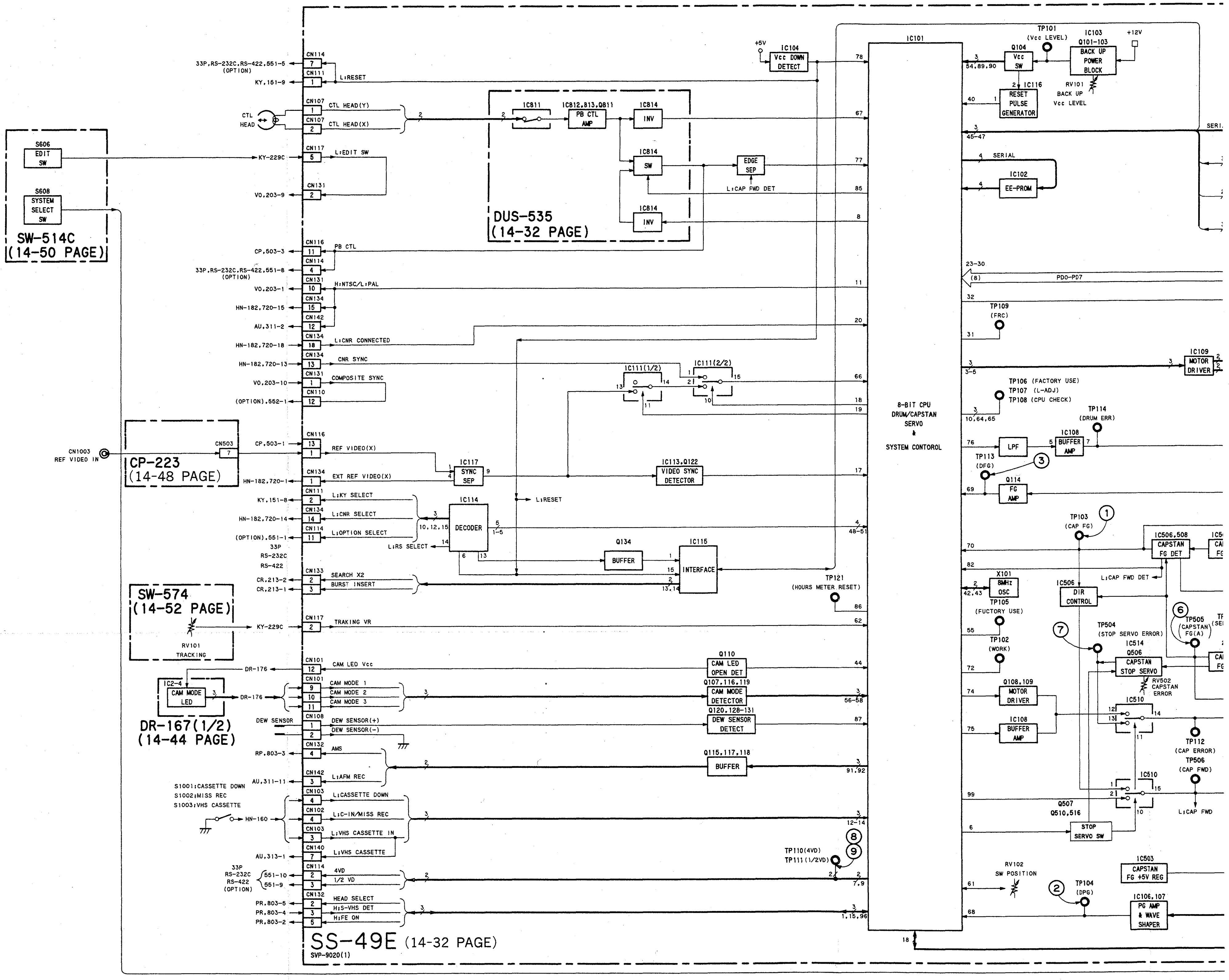
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+12V
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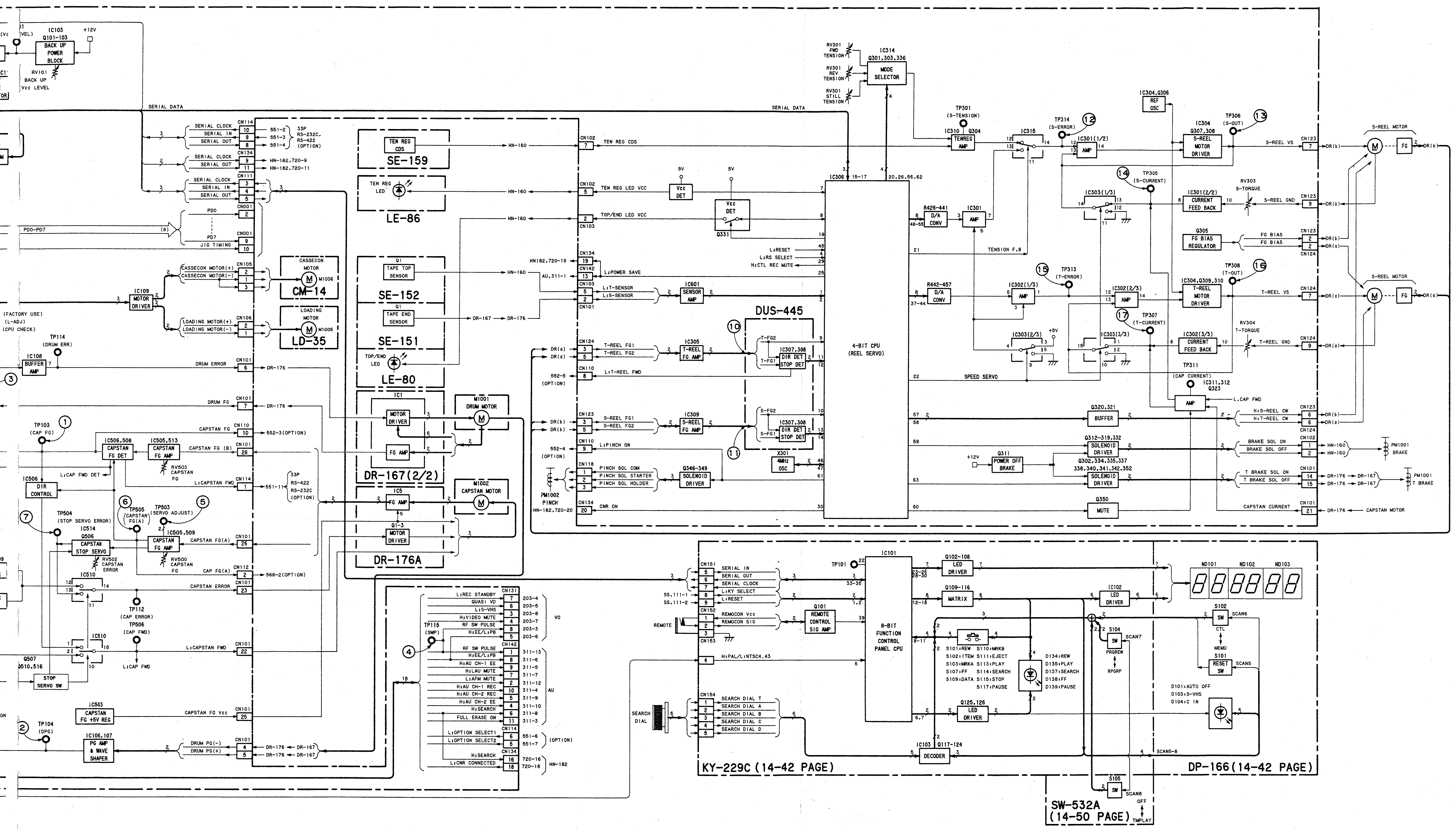
③
⑥
⑦
⑧
⑨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SECTION 13
SEMICONDUCTOR PIN ASSIGNMENTS

ICs, transistors and diodes that functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

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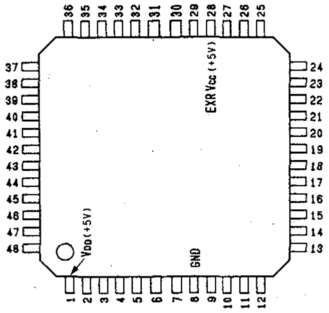
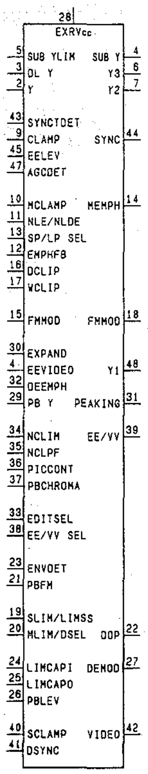
The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

AN3237FB (MATSUSHITA) FLAT PACKAGE
VTR LUMINANCE SIGNAL PROCESSOR
– TOP VIEW –


36 35 34 33 32 31 30 29 28 27 26 25
37 38 39 40 41 42 43 44 45 46 47 48
24 23 22 21 20 19 18 17 16 15 14 13
EXRVcc (+5V)
VDD (+5V)
GND
1 2 3 4 5 6 7 8 9 10 11 12

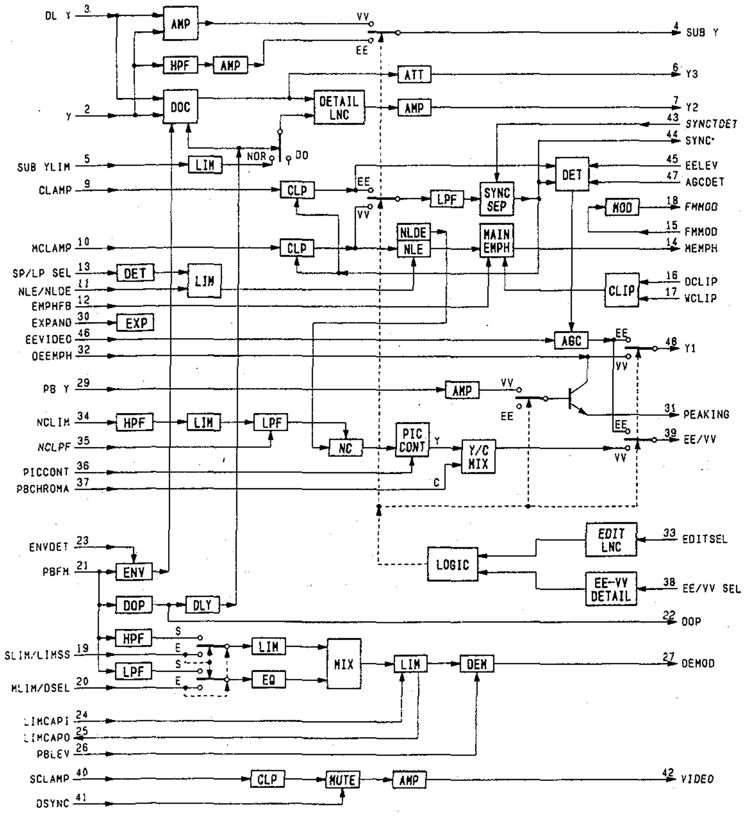
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	–	Vcc (+5V)	17	I	WCLIP	33	I	EDITSEL
2	I	Y	18	O	FMMOD	34	I	NCLIM
3	I	DL Y	19	I	SLIM/LIMSS	35	I	NCLPF
4	O	SUB Y	20	I	MLIM/DSEL	36	I	PICCONT
5	I	SUB YLIM	21	I	PBFM	37	I	PBCHROMA
6	O	Y3	22	O	DOP	38	I	EE/VV SEL
7	O	Y2	23	I	ENVDET	39	O	EE/VV
8	–	GND	24	I	LIMCAPI	40	I	SCLAMP
9	I	CLAMP	25	O	LIMCAPO	41	I	DSYNC
10	I	MCLAMP	26	I	PBLEV	42	O	VIDEO
11	I	NLE/NLDE	27	O	DEMOD	43	I	SYNCTDET
12	I	EMPHFB	28	–	EXRVcc (+5V)	44	O	SYNC
13	I	SP/LP SEL	29	I	PB Y	45	I	EELEV
14	O	MEMPH	30	I	EXPAND	46	I	EEVIDEO
15	I	FMMOD	31	O	PEAKING	47	I	AGCDET
16	I	DCLIP	32	I	DEEMPH	48	O	Y1


28 EXRVcc
5 SUB YLIM
3 DL Y
2 Y
SUB Y 4
Y3 6
Y2 7
43 SYNCTDET
9 CLAMP
45 EELEV
47 AGCDET
SYNC 44
10 MCLAMP
11 NLE/NLDE
13 SP/LP SEL
12 EMPHFB
16 DCLIP
17 WCLIP
MEMPH 14
15 FMMOD
FMMOD 18
30 EXPAND
4 EEVIDEO
32 DEEMPH
29 PB Y
Y1 48
PEAKING 31
34 NCLIM
35 NCLPF
36 PICCONT
37 PBCHROMA
EE/VV 39
33 EDITSEL
38 EE/VV SEL
23 ENVDET
21 PBFM
19 SLIM/LIMSS
20 MLIM/DSEL
DOP 22
24 LIMCAPI
25 LIMCAPO
26 PBLEV
DEMOD 27
40 SCLAMP
41 DSYNC
VIDEO 42

INPUT
AGCDET ; AUTO GAIN CONTROL DETECTION INPUT
CLAMP ; CLAMP INPUT
DCLIP ; DARK CLIP ADJUSTMENT INPUT
DEEMPH ; DEEMPHANSIS INPUT
DL Y ; DELAYED (1H) LUMINANCE SIGNAL INPUT
DSYNC ; DUMMY SYNC SIGNAL INPUT
EDITSEL ; EDIT MODE SELECT INPUT
EE/VV SEL ; EE/VV SELECT INPUT
EELEV ; EE VIDEO LEVEL ADJUSTMENT INPUT
EEVIDEO ; EE VIDEO INPUT
EMPHFB ; MAIN EMPHASIS FEEDBACK INPUT
ENVDET ; ENVELOPE DETECTION INPUT
EXPAND ; EXPANDER INPUT
FMMOD ; FM MODULATOR INPUT
LIMCAPI ; CAPACITOR CONNECTION FOR MAIN LIMITER
MCLAMP ; MAIN CLAMP INPUT
MLIM/DSEL ; DOUBLE (MAIN) LIMITER INPUT, WHEN EXTENDED DIFINITION MODE (S-VHS, Hi8 etc.) & DIFINITION SELECT INPUT
NCLIM ; LIMITER INPUT FOR NOISE CANCELER
NCLPF ; LPF INPUT FOR NOISE CANCELER
NLE/NLDE ; NON-LINEAR EMPHASIS/DEEMPHASIS INPUT
PBCHROMA ; PLAYBACK CHROMINANCE SIGNAL INPUT
PBFM ; PLAYBACK FM SIGNAL INPUT
PBLEV ; PLAYBACK LEVEL ADJUSTMENT INPUT
PB Y ; PLAYBACK Y SIGNAL INPUT
PICCONT ; PICTURE CONTROL INPUT
SCLAMP ; SECAND CLAMP INPUT
SLIM/LIMSS ; DOUBLE (SUB) LIMITER INPUT, WHEN EXTENDED DIFINITION MODE (S-VHS, Hi8 etc.) & DOUBLE LIMITER SWITCHOVER STOP INPUT
SP/LP SEL ; STANDARD/LONG PLAY MODE SELECT INPUT (FM CARRIER INTERLEAVE PULSE INPUT)
SUB YLIM ; LUMINANCE LIMITER INPUT
SYNCTDET ; SYNC TIP DETECTION INPUT
WCLIP ; WHITE CLIP ADJUSTMENT INPUT
Y ; LUMINANCE MAIN SIGNAL INPUT

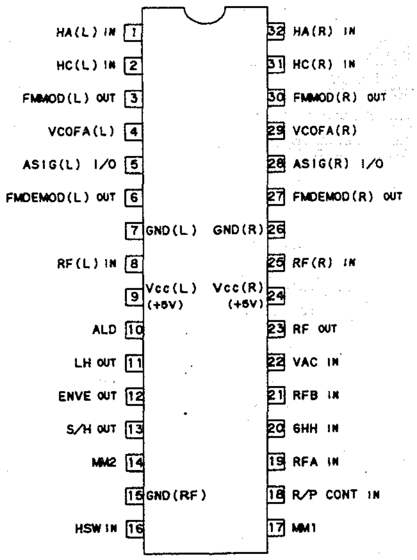
OUTPUT
DEMOD ; FM DEMODULATOR OUTPUT
DOP ; DROPOUT PULSE OUTPUT
EE/VV ; EE/VV SWITCHOVER OUTPUT
FMMOD ; FM MODULATOR OUTPUT
LIMCAPO ; CAPACITOR CONNECTION FOR MAIN LIMITER
MEMPH ; MAIN EMPHASIS OUTPUT
PEAKING ; VIDEO PEAKING OUTPUT
SUB Y ; LUMUNANCE SUB SIGNAL OUTPUT
SYNC ; COMPOSITE SYNC OUTPUT
VIDEO ; COMPOSITE VIDEO OUTPUT
Y1 ; Y SIGNAL OUTPUT
Y2 ; Y SIGNAL OUTPUT FOR CLAMP
Y3 ; Y SIGNAL OUTPUT FOR DELAYED Y

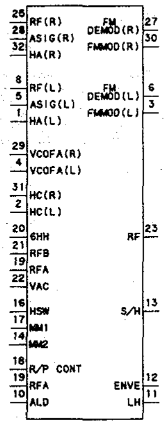
OTHER
EXRVcc ; EXCEPT REC Vcc (+5V)

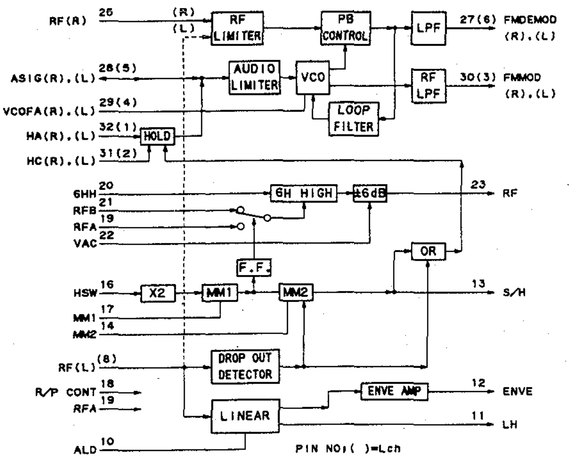

DL Y 3
Y 2
SUB YLIM 5
CLAMP 9
MCLAMP 10
SP/LP SEL 13
NLE/NLDE 11
EMPHFB 12
EXPAND 30
EEVIDEO 46
DEEMPH 32
PB Y 29
NCLIM 34
NCLPF 35
PICCONT 36
PBCHROMA 37
ENVDET 23
PBFM 21
SLIM/LIMSS 19
MLIM/DSEL 20
LIMCAPI 24
LIMCAPO 25
PBLEV 26
SCLAMP 40
DSYNC 41
AMP
HPF
AMP
DOC
LIM
NOR
DO
DETAIL LNC
ATT
AMP
CLP
CLP
EE
VV
LPF
SYNC SEP
DET
MOD
NLDE
NLE
MAIN EMPH
DET
LIM
EXP
CLIP
AGC
AMP
HPF
LIM
LPF
NC
PIC CONT
Y
Y/C MIX
C
LOGIC
EDIT LNC
EE-VV DETAIL
ENV
DOP
DLY
HPF
LPF
S
E
LIM
EQ
MIX
LIM
DEM
CLP
MUTE
AMP
4 SUB Y
6 Y3
7 Y2
43 SYNCTDET
44 SYNC
45 EELEV
47 AGCDET
18 FMMOD
15 FMMOD
14 MEMPH
16 DCLIP
17 WCLIP
48 Y1
31 PEAKING
39 EE/VV
33 EDITSEL
38 EE/VV SEL
22 DOP
27 DEMOD
42 VIDEO

NOTE: S:STANDARD DIFINITION
E:EXTENDED DIFINITION

AN3932S (MATSUSHITA)
FM AUDIO AND FM MAIN FOR VCR
– TOP VIEW –


HA(L) IN 1
HC(L) IN 2
FMMOD(L) OUT 3
VCOFA(L) 4
ASIG(L) I/O 5
FMDEMOD(L) OUT 6
7 GND(L)
RF(L) IN 8
9 Vcc(L) (+5V)
ALD 10
LH OUT 11
ENVE OUT 12
S/H OUT 13
MM2 14
15 GND(RF)
HSW IN 16
32 HA(R) IN
31 HC(R) IN
30 FMMOD(R) OUT
29 VCOFA(R)
28 ASIG(R) I/O
27 FMDEMOD(R) OUT
GND(R) 26
25 RF(R) IN
Vcc(R) (+5V) 24
23 RF OUT
22 VAC IN
21 RFB IN
20 6HH IN
19 RFA IN
18 R/P CONT IN
17 MM1


25 RF(R)
28 ASIG(R)
32 HA(R)
8 RF(L)
5 ASIG(L)
1 HA(L)
29 VCOFA(R)
4 VCOFA(L)
31 HC(R)
2 HC(L)
20 6HH
21 RFB
19 RFA
22 VAC
16 HSW
17 MM1
14 MM2
18 R/P CONT
19 RFA
10 ALD
FM DEMOD(R) 27
FMMOD(R) 30
FM DEMOD(L) 6
FMMOD(L) 3
RF 23
S/H 13
ENVE 12
LH 11


RF(R) 25
(R)
(L)
RF LIMITER
PB CONTROL
LPF
27(6) FMDEMOD (R),(L)
ASIG(R),(L) 28(5)
AUDIO LIMITER
VCO
RF LPF
30(3) FMMOD (R),(L)
VCOFA(R),(L) 29(4)
LOOP FILTER
HA(R),(L) 32(1)
HOLD
HC(R),(L) 31(2)
6HH 20
RFB 21
RFA 19
VAC 22
6H HIGH
16dB
23 RF
F.F.
OR
HSW 16
X2
MM1
MM2
13 S/H
MM1 17
MM2 14
RF(L) (8)
DROP OUT DETECTOR
R/P CONT 18
RFA 19
ENVE AMP
12 ENVE
LINEAR
11 LH
ALD 10

PIN NO;( )=Lch

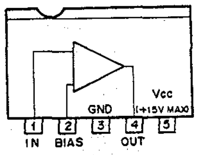
INPUT
6HH ;6H HIGH
HA(R),(L) ;HOLD AMP
HC(R),(L) ;HOLD CONTROL
HSW ;HOLD SWITCH
RF(R),(L) ;RF SIGNAL
RFA ;RF INPUT A
RFB ;RF INPUT B
R/P CONT ;REC/PB CONTROL
VAC ;VARIABLE AMP CONTROL

OUTPUT
ENVE ;ENVELOPE
FMDEMOD(R),(L) ;FM DEMODULATION
FMMOD(R),(L) ;FM MODULATION
LH ;LINEAR HIGH
RF ;RF OUTPUT
S/H ;S/H OUTPUT

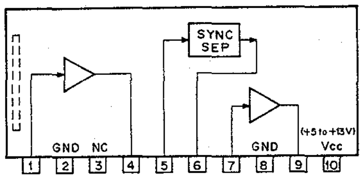
INPUT/OUTPUT
ASIG;AUDIO SIGNAL

OTHERS
ACD ;AUDIO LINEAR DETECTION
MM1 ;MONO MULTI1
MM2 ;MONO MULTI2
VCOFA(R),(L);VCO FREQUENCY ADJUSTMENT

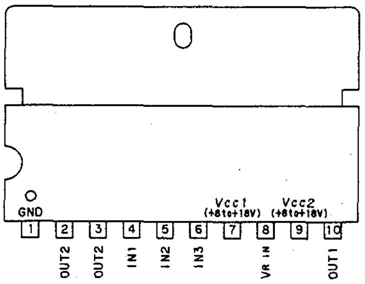
BA401 (ROHM)
RF AMPLIFIER
– SIDE VIEW –

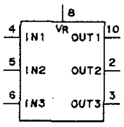

GND
Vcc (+15V MAX)
1
2
3
4
5
IN
BIAS
OUT

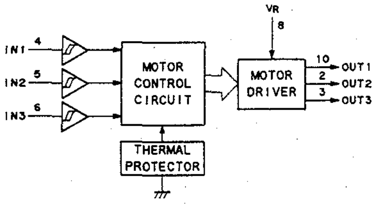
BX3915A (SONY)
SYNC SEPARATOR
– REAR VIEW –


SYNC SEP
GND
NC
GND
(+5 to +13V) Vcc
1
2
3
4
5
6
7
8
9
10

BA6238A (ROHM)
FORWARD AND REVERSE MOTOR DRIVER
– SIDE VIEW –


GND
Vcc1 (+8 to +18V)
Vcc2 (+8 to +18V)
1
2
3
4
5
6
7
8
9
10
OUT2
OUT2
IN1
IN2
IN3
VR IN
OUT1


8
VR
4 IN1
5 IN2
6 IN3
OUT1 10
OUT2 2
OUT3 3

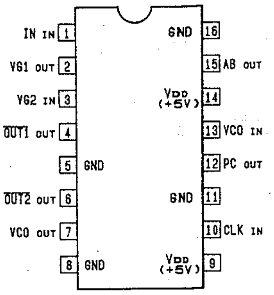

VR
8
IN1 4
IN2 5
IN3 6
MOTOR CONTROL CIRCUIT
MOTOR DRIVER
10 OUT1
2 OUT2
3 OUT3
THERMAL PROTECTOR

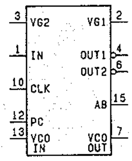
INPUT			OUTPUT			OPERATION
IN1	IN2	IN3	OUT1	OUT2	OUT3	
0	0	X	0	0	0	BRAKE
1	0	0	1	0	OPEN	MOTOR CURRENT OUT1→OUT2
1	0	1	0	1	OPEN	MOTOR CURRENT OUT2→OUT1
0	1	0	1	OPEN	0	MOTOR CURRENT OUT1→OUT3
0	1	1	0	OPEN	1	MOTOR CURRENT OUT3→OUT1
1	1	X	0	0	0	BRAKE

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

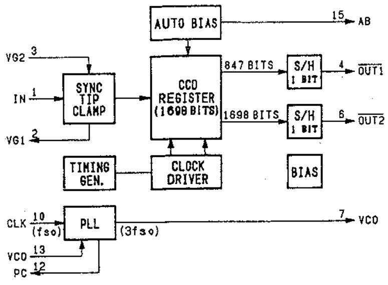
CXL1506M (SONY) FLAT PACKAGE

C-MOS CCD 1H/2H DELAY LINE FOR PAL VIDEO SYSTEM
– TOP VIEW –


IN IN 1
VG1 OUT 2
VG2 IN 3
OUT1 OUT 4
5 GND
OUT2 OUT 6
VCO OUT 7
8 GND
GND 16
15 AB OUT
VDD (+5V) 14
13 VCO IN
12 PC OUT
GND 11
10 CLK IN
VDD (+5V) 9

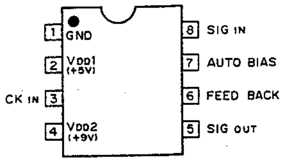

3 VG2
VG1 2
1 IN
OUT1 4
OUT2 6
10 CLK
AB 15
12 PC
13 VCO IN
VCO OUT 7

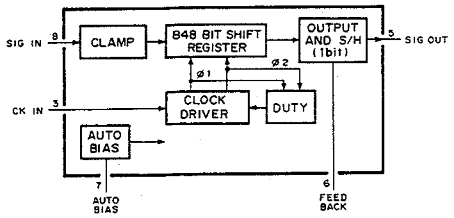
AB ; AUTO BIAS DC OUTPUT
CLK ; fsc CLOCK INPUT (4.433619 MHz)
IN ; POSITIVE SIGNAL INPUT
OUT1 ; 1H DELAY SIGNAL OUTPUT (NEGATIVE)
OUT2 ; 2H DELAY SIGNAL OUTPUT (NEGATIVE)
PC ; PHASE COMPARATER OUTPUT
VCO ; 3 · fsc CLOCK OUTPUT (PIN 7)
VCO ; VCO INPUT (PIN 13)
VG1 ; GATE BIAS 1 DC OUTPUT
VG2 ; GATE BIAS 2 DC INPUT


AUTO BIAS
15 AB
VG2 3
IN 1
VG1 2
SYNC TIP CLAMP
CCD REGISTER (1698 BITS)
847 BITS
1698 BITS
S/H 1 BIT
4 OUT1
S/H 1 BIT
6 OUT2
TIMING GEN.
CLOCK DRIVER
BIAS
CLK 10 (fso)
PLL
(3fso)
7 VCO
VCO 13
PC 12

CXL5003M (SONY) FLAT PACKAGE

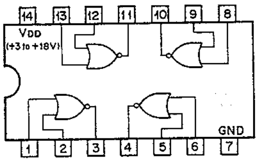
C-MOS CCD FOR PAL 1H DELAY LINE
– TOP VIEW –

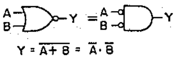

1 GND
2 VDD1 (+5V)
CK IN 3
4 VDD2 (+9V)
8 SIG IN
7 AUTO BIAS
6 FEED BACK
5 SIG OUT


SIG IN 8
CLAMP
848 BIT SHIFT REGISTER
OUTPUT AND S/H (1bit)
5 SIG OUT
ø1
ø2
CK IN 3
CLOCK DRIVER
DUTY
AUTO BIAS
7 AUTO BIAS
6 FEED BACK

MC14001BF (MOTOROLA) FLAT PACKAGE

C-MOS 2-INPUT NOR GATE
– TOP VIEW –


14
13
12
11
10
9
8
VDD (+3 to +18V)
GND
1
2
3
4
5
6
7



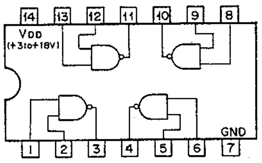
$Y = \overline{A+B} = \overline{A} \cdot \overline{B}$

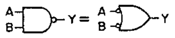
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

MC14011BF (MOTOROLA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE
– TOP VIEW –


14
13
12
11
10
9
8
VDD (+3 to +18V)
GND
1
2
3
4
5
6
7



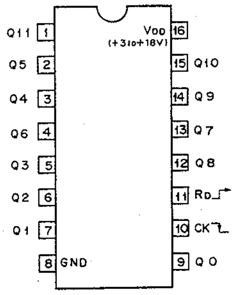
$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

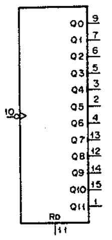
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

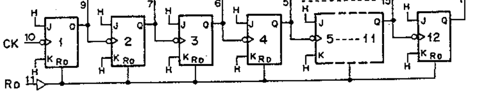
0 ; LOW LEVEL
1 ; HIGH LEVEL

MC14040BF (MOTOROLA) FLAT PACKAGE

C-MOS 12-STAGE RIPPLE CARRY BINARY COUNTER/DRIVER
– TOP VIEW –


Q11 1
Q5 2
Q4 3
Q6 4
Q3 5
Q2 6
Q1 7
8 GND
VDD (+3 to +18V) 16
15 Q10
14 Q9
13 Q7
12 Q8
11 RD
10 CK
9 Q0


10
Q0 9
Q1 7
Q2 6
Q3 5
Q4 3
Q5 2
Q6 4
Q7 13
Q8 12
Q9 14
Q10 15
Q11 1
RD
11


Q0
9
Q1
7
Q2
6
Q3
5
Q10
15
Q11
1
H
J
Q
K
RD
CK 10
1
2
3
4
5 ---- 11
12
RD 11

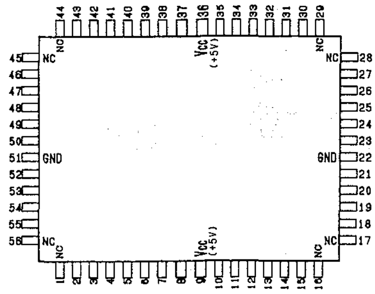
COUNT	Q11	Q10	Q9	Q8	Q7	Q6	Q5	Q4	Q3	Q2	Q1	Q0
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	1	0
3	0	0	0	0	0	0	0	0	0	0	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
4095	1	1	1	1	1	1	1	1	1	1	1	1

RD	Q11 -------- Q0
1	ALL LOW
0	COUNT

0 ; LOW LEVEL
1 ; HIGH LEVEL

M52059AFP (MITSUBISHI)

– TOP VIEW –


NC
Vcc (+5V)
NC
GND
GND
NC
NC
Vcc (+5V)
NC
NC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
45 46 47 48 49 50 51 52 53 54 55 56

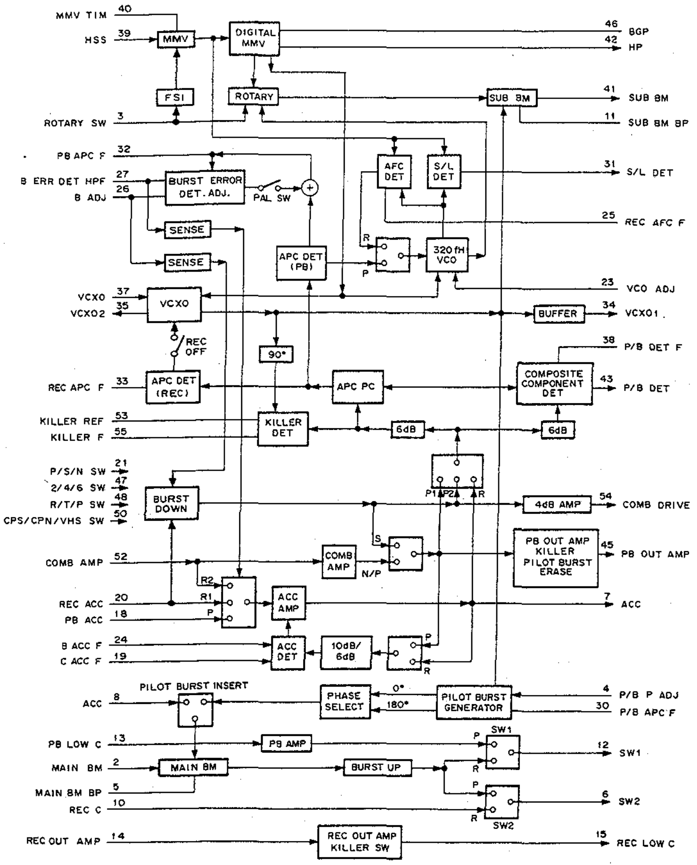
(Vcc = + 5V)

PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL	PIN No.	I/O	SYMBOL
1	–	NC	20	I	REC ACC	39	I	HSS
2	I	MAIN BM	21	I	P/S/N SW	40	–	MMV TIM
3	I	ROTARY SW	22	–	GND	41	O	SUB BM
4	I	P/B P ADJ	23	I	VCO ADJ	42	O	HP
5	I	MAIN BM BP	24	–	B ACC F	43	O	P/B DET
6	O	SW2	25	–	REC AFC F	44	–	NC
7	O	ACC	26	I	B ADJ	45	–	NC
8	I	ACC	27	–	B ERR DET HPF	46	O	BGP
9	–	Vcc	28	–	NC	47	I	2/4/6 SW
10	I	REC C	29	–	NC	48	I	R/T/P SW
11	I	SUB BM BP	30	I	P/B G ADJ	49	O	PB OUT AMP
12	O	SW1	31	O	S/L DET	50	I	CPS/CPN/VHS SW
13	I	PB LOW C	32	–	PB APC F	51	–	GND
14	I	REC OUT AMP	33	–	REC APC F	52	I	COMB AMP
15	O	REC LOW C	34	O	VCXO 1	53	–	KILLER REF
16	–	NC	35	O	VCXO 2	54	O	COMB DRIVE
17	–	NC	36	–	Vcc	55	–	KILLER F
18	I	PB ACC	37	I	VCXO	56	–	NC
19	–	C ACC F	38	–	P/B DET F			

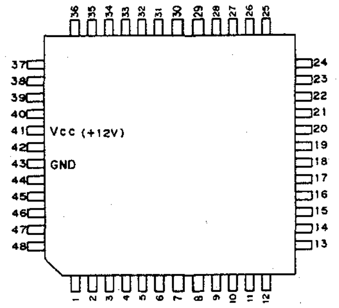
INPUT
2/4/6 SW ; 2H/4H/6H SWITCH CONTROL
ACC ; ACC OUTPUT
B ADJ ; BURST ADJUST
COMB AMP ; COMB AMPLIFIER
CPS/CPN/VHS SW ; COMPSITE/COMPONENT/VHS SWITCH CONTROL
HSS ; HORIZONTAL SYNC SIGNAL
MAIN BM ; MAIN BALANCED MODULATOR
MAIN BM BP ; MAIN BALANCED MODULATOR BYPASS CONTROL
P/B G ADJ ; PILOT BURST GAIN ADJUST
P/B P ADJ ; PILOT BURST PHASE ADJUST
P/S/N SW ; PAL/SECAM/NTSC SWITCH CONTROL
PB ACC ; AUTOMATIC COLOR CONTROL AMPLIFIER FOR PB
PB LOW C ; PB LOW RESONANCE CHROMA
R/T/P SW ; REC/TRICK/PB SWITCH CONTROL
REC ACC ; AUTOMATIC COLOR CONTROL AMPLIFIER FOR REC
REC C ; REC CHROMA SIGNAL
REC OUT AMP ; REC SIGNAL OUTPUT AMPLIFIER
ROTARY SW ; ROTATION SWITCH CONTROL
SUB BM BP ; SUB BALANCED MODULATOR BYPASS CONTROL
VCO ADJ ; 320 fH VCO ADJUST
VCXO ; VOLTAGE CONTROLED CRYSTAL OSCILLATOR

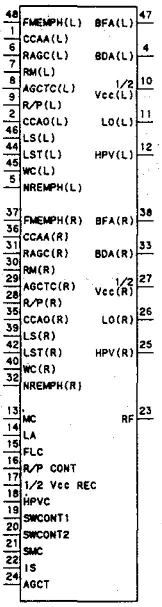
OUTPUT
ACC ; AUTOMATIC COLOR CONTROL AMPLIFITER
BGP ; BURST GATE PULSE
COMB DRIVE ; COMB DRIVE
HP ; HORIZONTAL PULSE
P/B DET ; PILOT BURST DETECTTION
PB OUT AMP ; PB SIGNAL OUTPUT AMPLIFIER
REC LOW C ; REC LOW RESONANCE CHROMA
S/L DET ; SIDE LOCK DETECTION
SUB BM ; SUB BALANCED MODULATOR
SW1 ; SWITCH 1
SW2 ; SWITCH 2
VCXO 1 ; BUFFERED VCXO
VCXO 2 ; VOLTAGE CONTROLED CRYSTAL OSCILLATOR

OTHER
B ACC F ; AUTOMATIC COLOR CONTROL FILTER FOR BURST
B ERR DET HPF ; BURST ERROR DETECT HIGH-PASS FILTER
C ACC F ; AUTOMATIC COLOR CONTROL FILTER FOR CHROMA
KILLER F ; COLOR KILLER FILTER
KILLER REF ; COLOR KILLER REFERENCE FILTER
MMV TIM ; MONOSTABLE MULTIVIBRATOR TIMING TIME CONSTANT
P/B DET F ; PILOT BURST DETECTION FILTER
PB APC F ; AUTOMATIC FREQUENCY CONTROL FILTER FOR PB
REC AFC F ; AUTOMATIC FREQUENCY CONTROL FILTER FOR REC
REC APC F ; AUTOMATIC PHASE CONTROL FILTER FOR REC

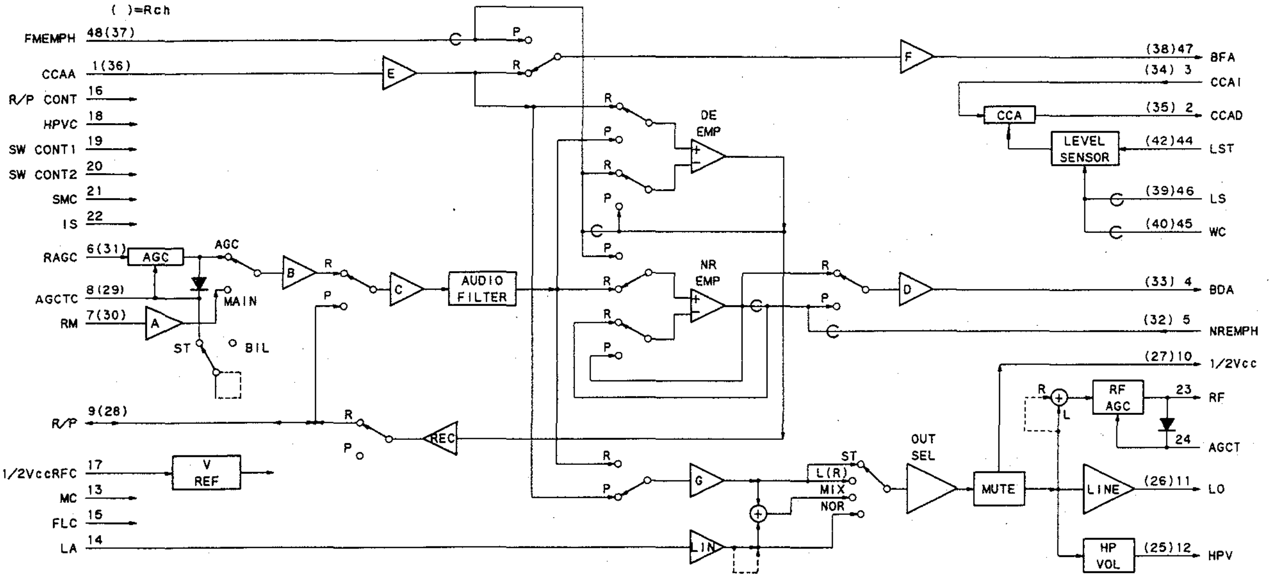

MMV TIM 40
HSS 39
MMV
DIGITAL MMV
46 BGP
42 HP
FSI
ROTARY
SUB BM
41 SUB BM
11 SUB BM BP
ROTARY SW 3
PB APC F 32
B ERR DET HPF 27
B ADJ 26
BURST ERROR DET. ADJ.
PAL SW
AFC DET
S/L DET
31 S/L DET
25 REC AFC F
SENSE
SENSE
APC DET (PB)
R
P
320 fH VCO
23 VCO ADJ
VCXO 37
VCXO2 35
VCXO
BUFFER
34 VCXO1
REC OFF
90°
38 P/B DET F
REC APC F 33
APC DET (REC)
APC PC
COMPOSITE COMPONENT DET
43 P/B DET
KILLER REF 53
KILLER F 55
KILLER DET
6dB
6dB
P/S/N SW 21
2/4/6 SW 47
R/T/P SW 48
CPS/CPN/VHS SW 50
BURST DOWN
P1 P2 R
4dB AMP
54 COMB DRIVE
S
COMB AMP 52
COMB AMP
N/P
PB OUT AMP KILLER PILOT BURST ERASE
45 PB OUT AMP
R2
R1
P
REC ACC 20
PB ACC 18
ACC AMP
7 ACC
B ACC F 24
C ACC F 19
ACC DET
10dB/6dB
P
R
PILOT BURST INSERT
ACC 8
PHASE SELECT
0°
180°
PILOT BURST GENERATOR
4 P/B P ADJ
30 P/B APC F
PB LOW C 13
PB AMP
SW1
P
R
12 SW1
MAIN BM 2
MAIN BM
BURST UP
MAIN BM BP 5
REC C 10
P
R
SW2
6 SW2
REC OUT AMP 14
REC OUT AMP KILLER SW
15 REC LOW C

AN3972FC (MATSUSHITA) FLAT PACKAGE
PEAK NOISE REDUCTION FOR HIFI VCR FM AUDIO
– TOP VIEW –


36
35
34
33
32
31
30
29
28
27
26
25
37
38
39
40
41
42
43
44
45
46
47
48
Vcc (+12V)
GND
24
23
22
21
20
19
18
17
16
15
14
13
1
2
3
4
5
6
7
8
9
10
11
12


48 FMEMPH(L)
1 CCAA(L)
6 RAGC(L)
7 RM(L)
8 AGCTC(L)
9 R/P(L)
2 CCAO(L)
46 LS(L)
44 LST(L)
45 WC(L)
5 NREMPH(L)
BFA(L) 47
BDA(L) 4
1/2 Vcc(L) 10
LO(L) 11
HPV(L) 12
37 FMEMPH(R)
36 CCAA(R)
31 RAGC(R)
30 RM(R)
29 AGCTC(R)
28 R/P(R)
35 CCAO(R)
39 LS(R)
42 LST(R)
40 WC(R)
32 NREMPH(R)
BFA(R) 38
BDA(R) 33
1/2 Vcc(R) 27
LO(R) 26
HPV(R) 25
13 MC
14 LA
15 FLC
16 R/P CONT
17 1/2 Vcc REC
18 HPVC
19 SWCONT1
20 SWCONT2
21 SMC
22 IS
24 AGCT
RF 23

PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL
1	I	CCAA(L)	17	I	1/2VccRFC	33	O	BDA(R)
2	O	CCAO(L)	18	I	HPVC	34	I	CCAI(R)
3	I	CCAI(L)	19	I	SWCONT1	35	O	CCAO(R)
4	O	BDA(L)	20	I	SWCONT2	36	I	CCAA(R)
5	I	NREMPH(L)	21	I	SMC	37	I	FMEMPH(R)
6	I	RAGC(L)	22	I	IS	38	O	BFA(R)
7	I	RM(L)	23	O	RF	39	I	LS(R)
8	I	AGCTC(L)	24	I	AGCT	40	I	WC(R)
9	I/O	R/P(L)	25	O	HPV(R)	41	–	Vcc(+12V)
10	O	1/2 Vcc(L)	26	O	LO(R)	42	I	LST(R)
11	O	LO(L)	27	O	1/2Vcc(R)	43	–	GND
12	O	HPV(L)	28	I/O	R/P(R)	44	I	LST
13	I	MC	29	I	AGCTC(R)	45	I	WC(L)
14	I	LA	30	I	RM(R)	46	I	LS(L)
15	I	FLC	31	I	RAGC(R)	47	O	BFA(L)
16	I	R/P CONT	32	I	NREMPH(R)	48	I	FMEMPH(L)


( )=Rch
FMEMPH 48(37)
CCAA 1(36)
R/P CONT 16
HPVC 18
SW CONT1 19
SW CONT2 20
SMC 21
IS 22
RAGC 6(31)
AGC
AGCTC 8(29)
RM 7(30)
A
MAIN
ST
BIL
B
C
E
F
AUDIO FILTER
R/P 9(28)
REC
1/2VccRFC 17
V REF
MC 13
FLC 15
LA 14
LIN
G
P
R
DE EMP
NR EMP
D
(38)47 BFA
(34) 3 CCAI
CCA
(35) 2 CCAO
LEVEL SENSOR
(42)44 LST
(39)46 LS
(40)45 WC
(33) 4 BDA
(32) 5 NREMPH
(27)10 1/2Vcc
RF AGC
23 RF
24 AGCT
L
OUT SEL
ST
L(R)
MIX
NOR
MUTE
LINE
(26)11 LO
HP VOL
(25)12 HPV

INPUT
1/2 Vcc RFC ; 1/2 Vcc RIPPLE FILTERER CAPACITOR
AGCT ; AGC TIMING FOR RF
AGCTC (L),(R) ; AGC TIMING CAPACITOR
CCAA (L),(R) ; CCA AMP
CCAI (L),(R) ; CCA INPUT
FLC ; FORCED LINEAR CONTROL
FMEMPH (L),(R) ; FM EMPHASIS CAPACITOR
HPVC ; HEADPHONE VOLUME CONTROL DC
IS ; REC AGC/MANUAL CONTROL
LA ; LINEAR AUDIO
LS (L),(R) ; LEVEL SENSOR
LST (L),(R) ; LEVEL SENSOR TIMING
MC ; MUTING CONTROL

NREMPH (L),(R) ; NR EMPHASIS CAPACITOR
RAGC (L),(R) ; REC AGC
RM (L),(R) ; REC MANUAL
R/P CONT ; REC/PB CONTROL
SMC ; AGC ST/BILL/OUTPUT MIX CONTROL
SW CONT1 ; OUTPUT SWITCHING CONTROL1
SW CONT2 ; OUTPUT SWITCHING CONTROL2

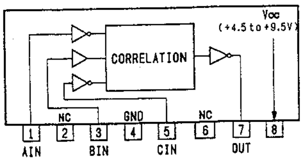
OUTPUT
1/2 Vcc (L),(R) ; 1/2 Vcc OUTPUT
BDA (L),(R) ; BUFFER D AMP
BFA (L),(R) ; BUFFER F AMP
CCAO (L),(R) ; CCA OUTPUT
HPV (L),(R) ; HEADPHONE VOLUME

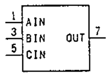
LO (L),(R) ;LINE OUTPUT
RF ;OUTPUT FOR RF

INPUT/OUTPUT
R/P (L),(R);REC OUT/PB IN

CXA1413L (SONY) FLAT PACKAGE

VERTICAL CORRELATOR FOR DYNAMIC COM FILTER
– PRINTED SIDE VIEW –


Vcc
(+4.5 to +9.5V)
CORRELATION
NC
GND
NC
1
2
3
4
5
6
7
8
AIN
BIN
CIN
OUT

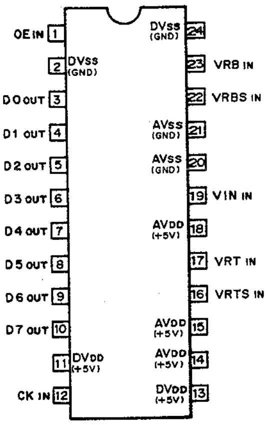

1
3
5
AIN
BIN
CIN
OUT
7

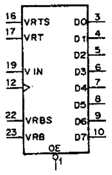
INPUT
AIN :0H INPUT
BIN :1H INPUT
CIN :2H INPUT
(BIASED TO $\frac{V_{CC}}{2}$ +0.7V
INPUT RESISTANCE AT 20k-OHM)

OUTPUT
OUT :CORRELATED OUTPUT ($\frac{V_{CC}}{2}$ -0.7V)

CXD1175AM (SONY) FLAT PACKAGE

C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER
– TOP VIEW –

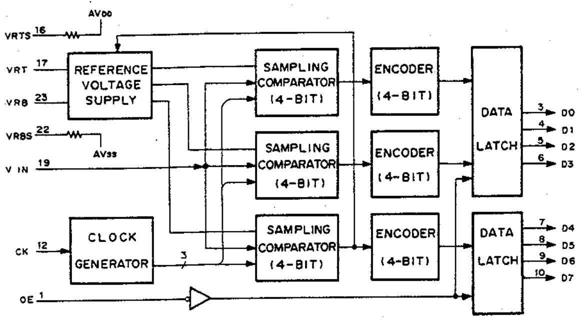

OE IN 1
2 DVss (GND)
D0 OUT 3
D1 OUT 4
D2 OUT 5
D3 OUT 6
D4 OUT 7
D5 OUT 8
D6 OUT 9
D7 OUT 10
11 DVDD (+5V)
CK IN 12
DVss (GND) 24
23 VRB IN
22 VRBS IN
AVss (GND) 21
AVss (GND) 20
19 VIN IN
AVDD (+5V) 18
17 VRT IN
16 VRTS IN
AVDD (+5V) 15
AVDD (+5V) 14
DVDD (+5V) 13


16 VRTS
17 VRT
19 VIN
12
22 VRBS
23 VRB
D0 3
D1 4
D2 5
D3 6
D4 7
D5 8
D6 9
D7 10
OE
1

AV_{DD} : ANALOG POWER SUPPLY
AV_{SS} : ANALOG GROUND
CK : CLOCK INPUT
D0 – 7 : DIGITAL DATA OUTPUTS (LSB to MSB)
DV_{DD} : DIGITAL POWER SUPPLY
DV_{SS} : DIGITAL GROUND
OE : OUTPUT ENABLE
(OE = HIGH : HIGH IMPEDANCE)
VIN : ANALOG VOLTAGE INPUT
VRB : BOTTOM REFERENCE VOLTAGE INPUT
VRBS : AS SHORT-CIRCUIT AT VRB, GENERATES + 0.6V
VRT : TOP REFERENCE VOLTAGE INPUT
VRTS : AS SHORT-CIRCUIT AT VRT, GENERATES + 2.6V

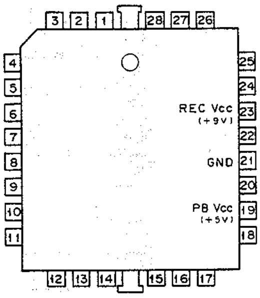
STEP	INPUT SIGNAL VOLTAGE	DATA OUTPUTS							
		D7	D6	D5	D4	D3	D2	D1	D0
0	0V (VRT)	1	1	1	1	1	1	1	1
1	0.01V	1	1	1	1	1	1	1	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
127	1.34V	1	0	0	0	0	0	0	0
128	1.35V	0	1	1	1	1	1	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
255	2.7V (VRB)	0	0	0	0	0	0	0	0

0 : LOW LEVEL
1 : HIGH LEVEL

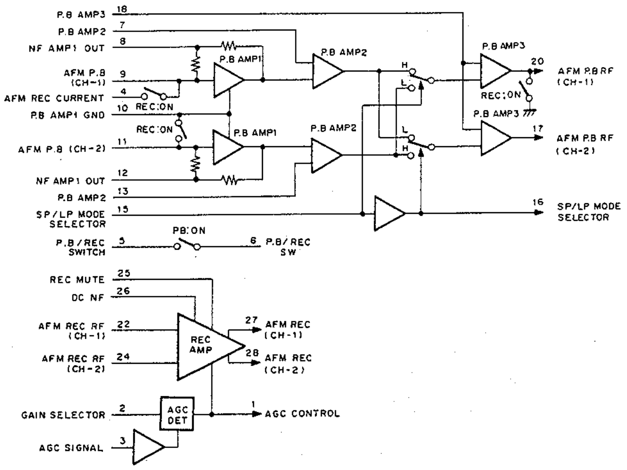

AVDD
VRTS 16
VRT 17
VRB 23
VRBS 22
AVss
V IN 19
REFERENCE VOLTAGE SUPPLY
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
SAMPLING COMPARATOR (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
ENCODER (4-BIT)
DATA LATCH
DATA LATCH
CK 12
CLOCK GENERATOR
3
OE 1
3 D0
4 D1
5 D2
6 D3
7 D4
8 D5
9 D6
10 D7

HA12115MP (HITACHI)

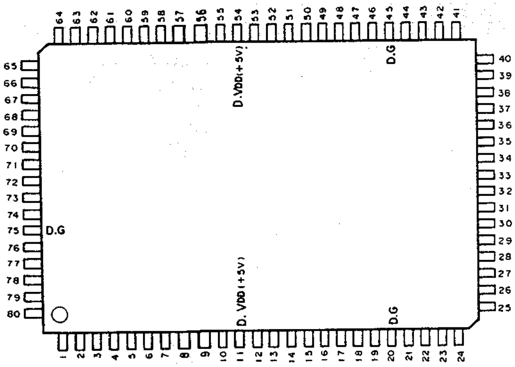
REC/PLAY AMPLIFIER FOR Hi-Fi VHS
– TOP VIEW –


3
2
1
28
27
26
4
5
6
7
8
9
10
11
25
24
23
22
21
20
19
18
REC Vcc (+9V)
GND
PB Vcc (+5V)
12
13
14
15
16
17

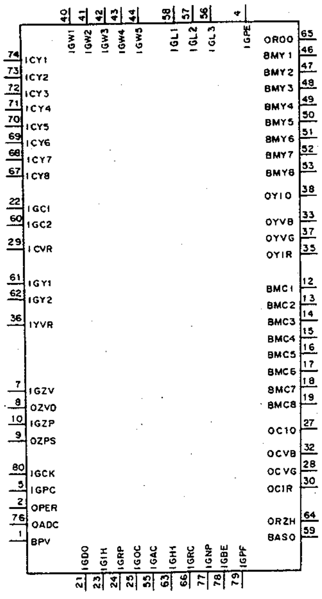
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	AGC CONTROL	15	I	SP/LP MODE SELECTOR
2	I	GAIN SELECTOR	16	O	SP/LP MODE SELECTOR
3	I	AGC SIGNAL	17	O	AFM P.B RF (CH-1)
4	I	AFM REC CURRENT	18	I	P.B AMP3
5	I	P.B/REC SWITCH	19	–	P.B Vcc
6	O	P.B/REC SWITCH	20		AFM P.B RF (CH-2)
7	I	P.B AMP2	21	–	GND
8	O	NF AMP1	22	I	AFM REC RF (CH-1)
9	I	AFM P.B (CH-1)	23	–	REC Vcc
10	I	P.B AMP1 GND	24	I	AFM REC RF (CH-2)
11	I	AFM P.B (CH-2)	25	I	REC MUTE
12	I	NF AMP1	26	I	DC NF
13	O	P.B AMP1	27	O	AFM REC (CH-1)
14	–	PRE Vcc	28	O	AFM REC (CH-2)


P.B AMP3 18
P.B AMP2 7
NF AMP1 OUT 8
AFM P.B (CH-1) 9
AFM REC CURRENT 4
P.B AMP1 GND 10
REC:ON
AFM P.B (CH-2) 11
NF AMP1 OUT 12
P.B AMP2 13
SP/LP MODE SELECTOR 15
P.B/REC SWITCH 5
PB:ON
6 P.B/REC SW
P.B AMP1
P.B AMP2
P.B AMP3
H
L
REC:ON
20 AFM P.B RF (CH-1)
17 AFM P.B RF (CH-2)
16 SP/LP MODE SELECTOR
REC MUTE 25
DC NF 26
AFM REC RF (CH-1) 22
AFM REC RF (CH-2) 24
REC AMP
27 AFM REC (CH-1)
28 AFM REC (CH-2)
GAIN SELECTOR 2
AGC DET
1 AGC CONTROL
AGC SIGNAL 3

CXD2105AQ (SONY) FLAT PACKAGE
C-MOS DIGITAL COMB FILTER FOR VTR'S
– TOP VIEW –



PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	BPV	21	I	IGD0	41	I	IGW2	61	I	IGY1
2	O	OPER	22	I	IGC1	42	I	IGW3	62	I	IGY2
3	–	A.VDD P	23	I	IGIH	43	I	IGW4	63	I	IGH1
4	I	IGPE	24	I	IGRP	44	I	IGW5	64	O	ORZH
5	I	IGPC	25	I	IGOC	45	–	D.G	65	O	OR00
6	–	A.G P	26	–	A.VDD C	46	I/O	BMY1	66	I	IGRC
7	I	IGZV	27	O	OCIO	47	I/O	BMY2	67	I	IYC8
8	O	OZVD	28	O	OCVG	48	I/O	BMY3	68	I	IYC7
9	O	OZPS	29	–	ICVR	49	I/O	BMY4	69	I	IYC6
10	I	IGZP	30	O	OCIR	50	I/O	BMY5	70	I	IYC5
11	–	D.VDD	31	–	A.G C	51	I/O	BMY6	71	I	IYC4
12	I/O	BMC1	32	O	OCVB	52	I/O	BMY7	72	I	IYC3
13	I/O	BMC2	33	O	OYVB	53	I/O	BMY8	73	I	IYC2
14	I/O	BMC3	34	–	A.G Y	54	–	D.VDD	74	I	IYC1
15	I/O	BMC4	35	O	OYIR	55	I	IGAC	75	–	D.G
16	I/O	BMC5	36	–	IYVR	56	I	IGL3	76	O	OADC
17	I/O	BMC6	37	O	OYVG	57	I	IGL2	77	I	IGNP
18	I/O	BMC7	38	O	OYIO	58	I	IGL1	78	I	IGBE
19	I/O	BMC8	39	–	A.VDD Y	59	I/O	BASO	79	I	IGPF
20	–	D.G	40	I	IGW1	60	I	IGC2	80	I	IGCK



INPUT

BPV	; EXT/INT CLOCK SELECT
ICVR	; ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OCIO (PIN 27)
IGAC	; V CORRELATION CIRCUIT ON/OFF
IGBE	; SINGLE WAVE DETECTION ON/OFF (Y/C SEPARATION MODE)
IGC1	; V CORRELATION CIRCUIT SELECT
IGC2	; CHROMA FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGCK	; EXTERNAL CLOCK
IGD0	; DROPOUT CORRECTION
IGH1	; FLAT SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGIH	; SLEW MODE SET
IGL1 – IGL3	; LIMITER LEVEL ADJUST FOR Y SIGNAL COMB FILTER
IGNP	; NTSC/PAL FORMAT SELECT
IGOC	; OUTPUT ENABLE
IGPC	; VCO CONTROL
IGPE	; TEST
IGPF	; PLL SUBCARRIER
IGRC	; DELAY LINE LENGTH ADJUST
IGRP	; Y/C SEPARATION AND PLAYBACK MODE SELECT
IGW1 – IGW5	; Y COMB FILTER DEPTH ADJUST
IGY1, IGY2	; EDGE SECTION HORIZONTAL FILTER SELECT (Y/C SEPARATION MODE)
IGZP	; 1-BIT DELAY CIRCUIT
IGZV	; VCR HEAD SWITCHING
IYC1 – IYC8	; VIDEO SIGNAL
IYVR	; ESTABLISHES MAXIMUM AMPLITUDE VALUE FOR OYIO (PIN 38)

OUTPUT

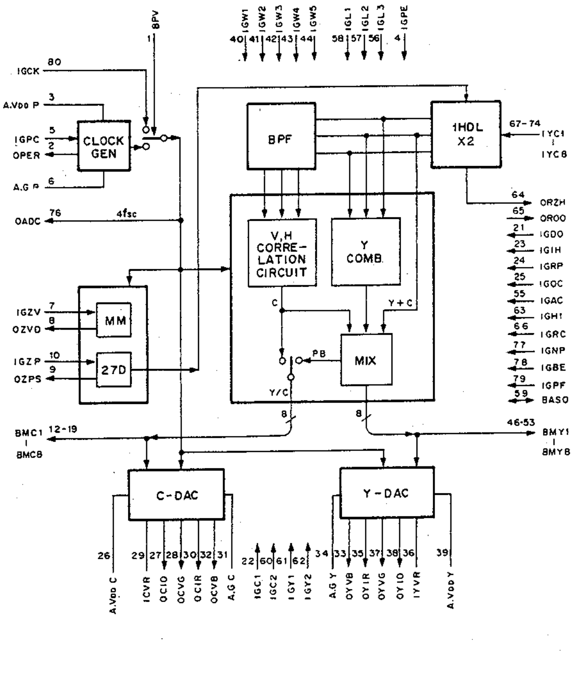
OADC	; CLOCK
OCIO	; CHROMA ANALOG SIGNAL
OCIR	; CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OCIO (PIN 27)
OCVB	; CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OCVG	; CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OPER	; PLL ERROR
OR00	; "0" IS DETECTED AT ALL INPUTS
ORZH	; 1-BIT DELAY CIRCUIT
OYIO	; Y ANALOG SIGNAL
OYIR	; CONNECT A RESISTOR 16x LARGE THAN THE RESISTOR AT OYIO (PIN 38)
OYVB	; CONNECT TO DIGITAL GND WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OYVG	; CONNECT TO AN ANALOG POWER SUPPLY WHICH HAS A CAPACITANCE OF UP TO 0.1 µF
OZPS	; 1-BIT DELAY CIRCUIT
OZVD	; VSYNC PERIOD MASK

INPUT/OUTPUT

BASO	; EDGE DETECTION LEVEL SELECT (Y/C SEPARATION MODE)
BMC1 – BMC8	; CHROMA DIGITAL SIGNAL
BMY1 – BMY8	; Y DIGITAL SIGNAL

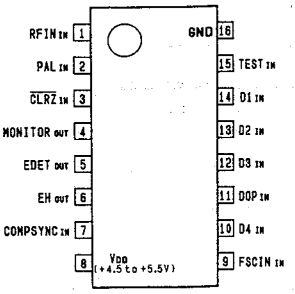
OTHER

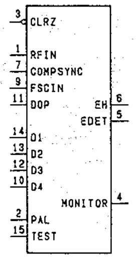
A.G C	; ANALOG GND FOR CHROMA D/A
A.G P	; ANALOG GND FOR VCO
A.G Y	; ANALOG GND FOR Y D/A
A.VDD C	; ANALOG POWER SUPPLY FOR CHROMA D/A
A.VDD P	; ANALOG POWER SUPPLY FOR VCO
A.VDD Y	; ANALOG POWER SUPPLY FOR Y D/A
D.G	; DIGITAL GND
D.VDD	; POWER SUPPLY FOR DIGITAL



CXD2107M (SONY) FLAT PACKAGE

C-MOS DEFINITION DETECTOR
– TOP VIEW –

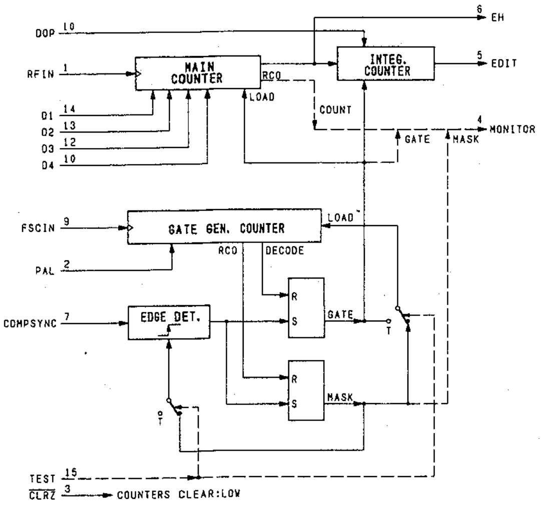

RFIN IN 1
PAL IN 2
CLRZ IN 3
MONITOR OUT 4
EDET OUT 5
EH OUT 6
COMPSYNC IN 7
8 VDD (+4.5 to +5.5V)
GND 16
15 TEST IN
14 D1 IN
13 D2 IN
12 D3 IN
11 DOP IN
10 D4 IN
9 FSCIN IN

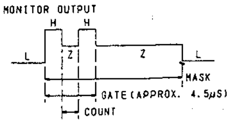

3 CLRZ
1 RFIN
7 COMPSYNC
9 FSCIN
11 DOP
14 D1
13 D2
12 D3
10 D4
2 PAL
15 TEST
EH 6
EDET 5
MONITOR 4

INPUT
CLRZ ; CLEAR SIGNAL INPUT FOR INTERNAL COUNTERS
COMPSYNC; COMPOSITE SYNC INPUT
D1–D4 ; LOAD DATA INPUTS FOR MAIN COUNTER (D0=HIGH, FIXED DATA)
DOP ; DROPOUT CONPENSATION PULSE INPUT
FSCIN ; COLOR SUBCARRIER INPUT. NTSC=3.579545MHz, PAL=4.433619MHz
PAL ; OPERATION MODE SELECT INPUT. HIGH=PAL, LOW=NTSC
RFIN ; PLAYBACK Y RF SIGNAL INPUT
TEST ; TEST CONTROL INPUT. NORMAL=LOW

OUTPUT
EDET ; E* MODE DETECTION OUTPUT. CONTINUOUS 16H
EH ; E* MODE DETECTION OUTPUT. DISTINGUISH IN 1H
MONITOR ; MONITOR OUTPUT OF COUNT, GATE, AND MASK PULSES

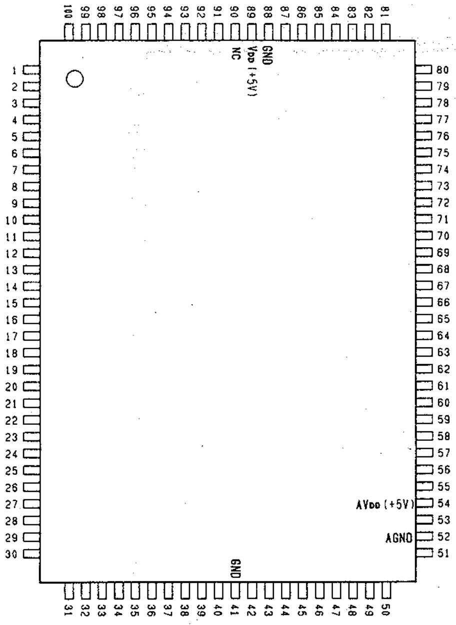
NOTE
E* ; EXTENDED DEFINITION


DOP 10
RFIN 1
D1 14
D2 13
D3 12
D4 10
MAIN COUNTER
RCO
LOAD
INTEG. COUNTER
6 EH
5 EDIT
COUNT
GATE
MASK
4 MONITOR
FSCIN 9
GATE GEN. COUNTER
LOAD
RCO
DECODE
PAL 2
COMPSYNC 7
EDGE DET.
R
S
GATE
T
R
S
MASK
T
TEST 15
CLRZ 3
COUNTERS CLEAR:LOW


MONITOR OUTPUT
H
H
L
Z
Z
L
MASK
GATE (APPROX. 4.5μS)
COUNT

CXP80624 (SONY) FLAT PACKAGE

C-MOS 8-BIT 1-CHIP MICROCOMPUTER
– TOP VIEW –


100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81
GND
VDD (+5V)
NC
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
80 79 78 77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51
AVDD (+5V)
AGND
GND
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

INPUT
AN0 – AN11 ; A-D CONVERTOR'S ANALOG INPUTS
AVREF ; A-D CONVERTOR'S REFERENCE VOLTAGE INPUT
CFG ; CAPSTAN FG INPUT
CS0 ; SERIAL INTERFACE CHANNLE 0 SELECT INPUT
DPG,DFG ; DURM PG AND FG INPUTS
EC ; EVENT CONTROL INPUT FOR TIMER/COUNTER
EXI0,EXI1 ; FRC CAPTURE UNIT'S EXTERNAL INPUTS
EXTAL ; CRYSTAL CONNECTION OR EXTERNAL CLOCK INPUT FOR SYSTEM CLOCK GENERATOR
INT0 – INT2 ; INTERRUPT REQUEST INPUTS (FALLING EDGE ACTIVE)
PBCTL ; PLAYBACK CTL PULSE INPUT
PCK ; PRESCALER'S EXTERNAL CLOCK INPUT
PE0,PE1 ; INPUTS OF PORT E (PE2 – PE7 ; OUTPUTS)
PF0 – PF3 ; INPUTS OF PORT F (PF4 – PF7 ; OUTPUTS)
PG0 – PG7 ; INPUTS OF PORT G
PI0 ; INPUT OF PORT I (PI1 – PI7 ; INPUTS/OUTPUTS)
PK0 ; INPUT OF PORT K
SI0,SI1 ; SERIAL DATA INPUTS (CHANNLE 0 AND CHANNLE 1)
SYNC0,SYNC1 ; COMPOSITE SYNC SIGNAL INPUTS

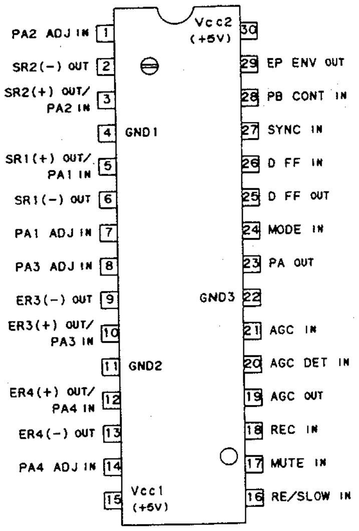
OUTPUT
DAA0,DAB0 ; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 0)
DAA1,DAB1 ; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 1)
MP ; MICROPROCESSOR MODE INPUT
PA0 – PA7 ; OUTPUTS OF PORT A
PB0 – PB7 ; OUTPUTS OF PORT B
PE2 – PE7 ; OUTPUTS OF PORT E (PE0, PE1 ; INPUTS)
PF4 – PF7 ; OUTPUTS OF PORT F (PF0 – PF3 ; INPUTS)
PH0 – PH7 ; OUTPUTS OF PORT H (N-CH OPEN DRAIN OUTPUTS)
PPO0 – PPO18 ; PROGRAMMABLE PATTERN GENERATOR OUTPUS
PO ; PRESCALER OUTPUT
PWM ; PULSE WIDTH MODULATION OUTPUT
PWM0,PWM1 ; 12 BITS PULSE WIDTH MODULATION OUTPUTS (CHANNLE 0 AND CHANNLE 1)
RTO3 – RTO7 ; REALTIME PULSE GENERATOR OUTPUTS
SO0,SO1 ; SERIAL DATA OUTPUTS (CHANNLE 0 AND CHANNLE 1)
TO ; TIMER/COUNTER OUTPUT (DUTY 50 %)
XTAL ; CRYSTAL CONNECTION

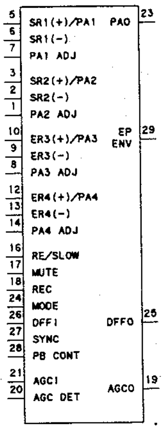
INPUT/OUTPUT
PC0 – PC7 ; INPUTS/OUTPUTS OF PROT C (BIT PROGRAMMABLE)
PD0 – PD7 ; INPUTS/OUTPUTS OF PROT D (4 BITS PROGRAMMABLE)
PI1 – PI7 ; INPUTS/OUTPUTS OF PROT I (BIT PROGRAMMABLE, PI0 ; INPUT)
PJ0 – PJ7 ; INPUTS/OUTPUTS OF PROT J (BIT PROGRAMMABLE)
RST ; SYSTEM RESET INPUT AND POWER ON RESET OUTPUT
SCK0,SCK1 ; SERIAL CLOCK INPUTS/OUTPUTS (CHANNLE 0 AND CHANNLE 1)

OTHER
AGND ; A-D CONVERTOR'S GROUND
AVDD (+ 5V) ; A-D CONVERTOR'S VDD

HA118019NT (HITACHI)

VTR PRE REC AMP
– TOP VIEW –


PA2 ADJ IN 1
SR2(–) OUT 2
SR2(+) OUT/ PA2 IN 3
4 GND1
SR1(+) OUT/ PA1 IN 5
SR1(–) OUT 6
PA1 ADJ IN 7
PA3 ADJ IN 8
ER3(–) OUT 9
ER3(+) OUT/ PA3 IN 10
11 GND2
ER4(+) OUT/ PA4 IN 12
ER4(–) OUT 13
PA4 ADJ IN 14
15 Vcc1 (+6V)
Vcc2 (+5V) 30
29 EP ENV OUT
28 PB CONT IN
27 SYNC IN
26 D FF IN
25 D FF OUT
24 MODE IN
23 PA OUT
GND3 22
21 AGC IN
20 AGC DET IN
19 AGC OUT
18 REC IN
17 MUTE IN
16 RE/SLOW IN


5 SR1(+)/PA1
6 SR1(–)
7 PA1 ADJ
3 SR2(+)/PA2
2 SR2(–)
1 PA2 ADJ
10 ER3(+)/PA3
9 ER3(–)
8 PA3 ADJ
12 ER4(+)/PA4
13 ER4(–)
14 PA4 ADJ
16 RE/SLOW
17 MUTE
18 REC
24 MODE
26 DFFI
27 SYNC
28 PB CONT
21 AGCI
20 AGC DET
PAO 23
EP ENV 29
DFFO 25
AGCO 19

INPUT
AGCI ;AGC
AGC DET ;AGC DETECT
DFFI ;DRUM FF
MODE ;MODE CONTROL (L;SP/H;EP)
MUTE ;REC MUTE CONTROL
PA1-PA4 ;PRE AMP CH1-CH4
PA1-PA4 ADJ ;PRE AMP CH1-CH4 ADJUST
PB CONT ;PB CONTROL (MANUAL/AUTO/STILL)
REC ;REC
RE/SLOW ;REC EQ/SLOW CONTROL
SYNC ;SYNC SEPARATE

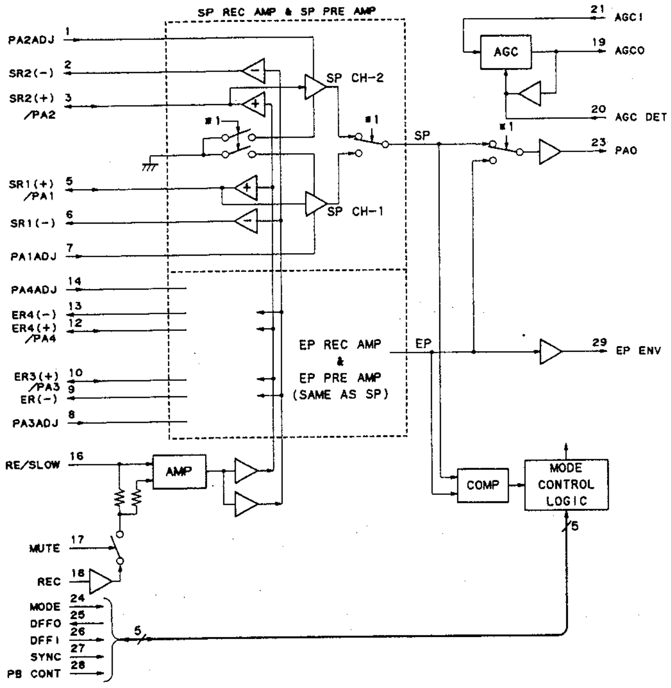
OUTPUT
AGCO ;AGC OUTPUT (PB/REC SELECT)
DFFO ;DRUM FF
EP ENV ;EP ENVELOPE
ER3(+).ER4(+) ;EP REC CH3/CH4(+)
ER3(–).ER4(–) ;EP REC CH3/CH4(–)
PAO ;PRE AMP
SR1(+).SR2(+) ;SP REC CH1/CH2(+)
SR1(–).SR2(–) ;SP REC CH1/CH2(–)

MODE CONTROL

SYMBOL / MODE	DFF1	MODE	PB CONT	RE/ SLOW	DFFO	PAO
SP PB	0	0	1	OPEN	0	CH1
	1	0	1	OPEN	1	CH2
EP PB	0	1	1	OPEN	1	CH4
	1	1	1	OPEN	0	CH3
AUTO	0	–	MIDDLE	OPEN		
	1	–	MIDDLE	OPEN		
SP STILL	0	0	0	OPEN	1	CH4
	1	0	0	OPEN	1	CH2
EP STILL	0	1	0	OPEN	0	CH1
	1	1	0	OPEN	0	CH3
SP SLOW	0	0	0	0	0	CH1
	1	0	0	0	1	CH2
EP SLOW	0	1	0	0	1	CH4
	1	1	0	0	0	CH3

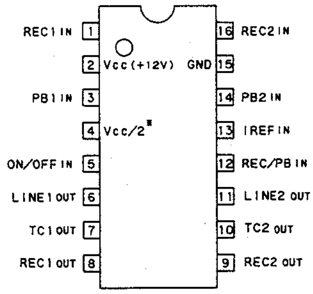
0	CH1
1	CH4
1	CH2
0	CH3

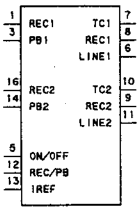
1;HIGH LEVEL
0;LOW LEVEL


SP REC AMP & SP PRE AMP
PA2ADJ 1
SR2(–) 2
SR2(+) /PA2 3
*1
SP CH-2
SP CH-1
SR1(+) /PA1 5
SR1(–) 6
PA1ADJ 7
PA4ADJ 14
ER4(–) 13
ER4(+) /PA4 12
ER3(+) /PA3 10
ER(–) 9
PA3ADJ 8
EP REC AMP & EP PRE AMP (SAME AS SP)
SP
EP
AGC
21 AGCI
19 AGCO
20 AGC DET
23 PAO
29 EP ENV
RE/SLOW 16
AMP
MUTE 17
REC 18
MODE 24
DFFO 25
DFFI 26
SYNC 27
PB CONT 28
5
COMP
MODE CONTROL LOGIC

CXA1102P (SONY)

DOLBY TYPE-B NOISE REDUCTION SYSTEM
– TOP VIEW –

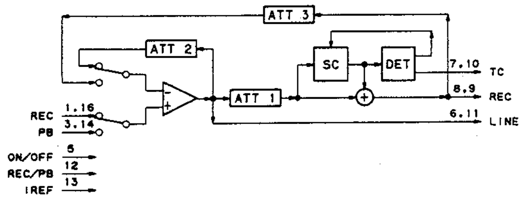

REC1 IN 1
2 Vcc(+12V)
PB1 IN 3
4 Vcc/2*
ON/OFF IN 5
LINE1 OUT 6
TC1 OUT 7
REC1 OUT 8
GND 15
16 REC2 IN
14 PB2 IN
13 IREF IN
12 REC/PB IN
11 LINE2 OUT
10 TC2 OUT
9 REC2 OUT


1 REC1
3 PB1
16 REC2
14 PB2
5 ON/OFF
12 REC/PB
13 IREF
TC1 7
REC1 8
LINE1 6
TC2 10
REC2 9
LINE2 11

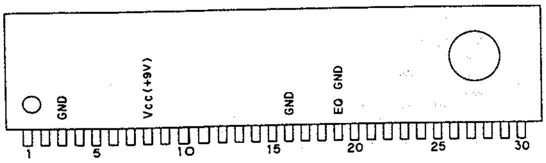
*Vcc/2:SINGLE VOLTAGE :+6V
DOUBLE VOLTAGE :GND

INPUT
IREF ;REFERENCE CURRENT SOURCE
ON/OFF;DOLBY NR ON/OFF SELECT(H:OFF/L:ON)
PB ;PB(DECODE) INPUT
REC ;REC(ENCODE) INPUT
REC/PB;REC/PB SELECT(H:PB/L:REC)

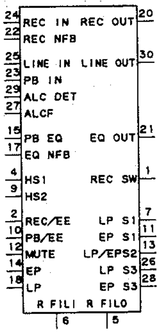
OUTPUT
LINE;LINE(DECODE) OUTPUT
REC ;REC(ENCODE) OUTPUT
TC ;LEVEL DETECTOR TIME CONSTANT

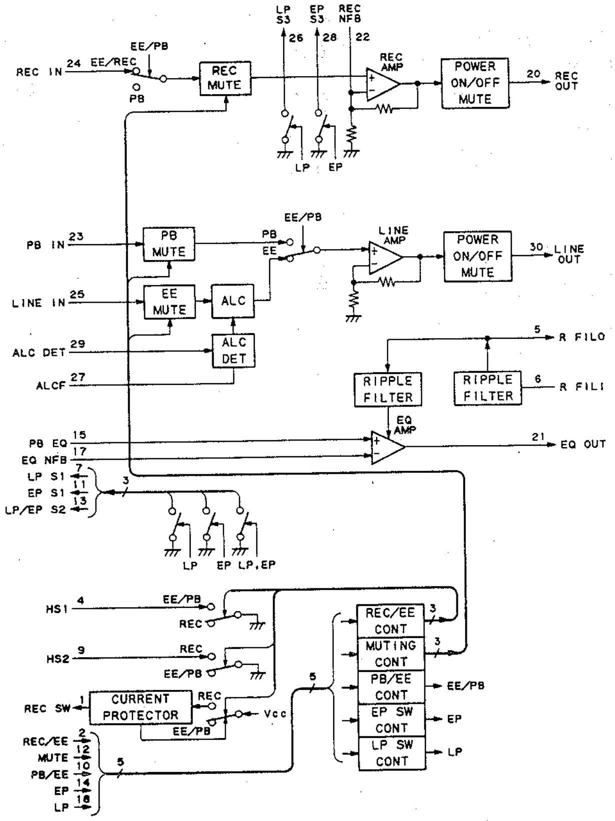

ATT 3
ATT 2
ATT 1
SC
DET
REC 1.16
PB 3.14
7.10 TC
8.9 REC
6.11 LINE
ON/OFF 5
REC/PB 12
IREF 13

LA7297 (SANYO)
AUDIO SIGNAL REC/PB PROCESSOR
- SIDE VIEW -


GND
Vcc(+9V)
GND
EQ GND
1
5
10
15
20
25
30

PIN NO	I/O	SYMBOL	PIN NO	I/O	SYMBOL
1	O	REC SW	16	—	GND
2	I	REC/EE	17	I	EQ NFB
3	—	GND	18	I	LP
4	I	HS1	19	—	EQ GND
5	O	R FILO	20	O	REC OUT
6	I	R FILI	21	O	EQ OUT
7	O	LP S1	22	I	REC NFB
8	—	Vcc	23	I	PB IN
9	I	HS2	24	I	REC IN
10	I	PB/EE	25	I	LINE IN
11	O	EP S1	26	O	LP S3
12	I	MUTE	27	—	ALCF
13	O	LP/EP S2	28	O	EP S3
14	I	EP	29	I	ALC DET
15	I	PB EQ	30	O	LINE OUT

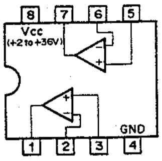

24 REC IN
REC OUT 20
22 REC NFB
25 LINE IN
LINE OUT 30
23 PB IN
29 ALC DET
27 ALCF
15 PB EQ
EQ OUT 21
17 EQ NFB
4 HS1
REC SW 1
9 HS2
2 REC/EE
LP S1 7
10 PB/EE
EP S1 11
12 MUTE
LP/EPS2 13
14 EP
LP S3 26
18 LP
EP S3 28
R FILI 6
R FILO 5


LP S3
EP S3
REC NFB
26
28
22
EE/PB
REC IN 24
EE/REC
PB
REC MUTE
REC AMP
POWER ON/OFF MUTE
20 REC OUT
LP
EP
PB IN 23
PB MUTE
EE/PB
PB
EE
LINE AMP
POWER ON/OFF MUTE
30 LINE OUT
LINE IN 25
EE MUTE
ALC
ALC DET 29
ALC DET
ALCF 27
5 R FILO
RIPPLE FILTER
RIPPLE FILTER
6 R FILI
EQ AMP
PB EQ 15
EQ NFB 17
21 EQ OUT
LP S1 7
EP S1 11
LP/EP S2 13
3
LP
EP
LP,EP
HS1 4
EE/PB
REC
HS2 9
REC
EE/PB
REC SW 1
CURRENT PROTECTOR
REC
EE/PB
Vcc
REC/EE 2
MUTE 12
PB/EE 10
EP 14
LP 18
5
REC/EE CONT
MUTING CONT
PB/EE CONT
EP SW CONT
LP SW CONT
EE/PB
EP
LP

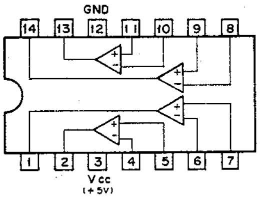
INPUT
ALC DET ;AUTO LIMITER CONTROL DETECTOR
ALCF ;AUTO LIMITER CONTROL FILTER
EP ;EP SWITCH CONTROL
EQ NFB ;PB EQUALIZED NEGATIVE FEEDBACK
HS1.2 ;HEAD SWITCH 1.2
LP ;LP SWITCH CONTROL
LINE IN ;AUDIO LINE
MUTE ;MUTE SWITCH CONTROL
PB/EE ;PB/EE SWITCH CONTROL
PB EQ ;PB EQUALIZED
PB IN ;AUDIO PB LEVEL
REC/EE ;REC/EE SWITCH CONTROL
REC IN ;AUDIO REC LEVEL
REC NFB ;AUDIO REC NEGATIVE FEEDBACK
R FILI ;RIPPLE FILTER

OUTPUT
EP S1-3 ;EP SWITCH
EQ OUT ;PB EQUALIZED
LINE OUT;AUDIO LINE
LP S1-3 ;LP SWITCH
REC OUT ;AUDIO REC LEVEL
REC SW ;REC HEAD VOLTAGE CONTROL SWITCH
R FILO ;RIPPLE FILTER

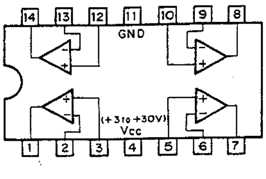
LM2903DQ (RAYTHEON)
NJM2903D (JRC)
DUAL VOLTAGE COMPARATORS
- TOP VIEW -


8
7
6
5
Vcc (+2to+36V)
GND
1
2
3
4

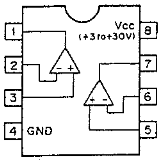
LM339N (TI)
QUAD COMPARATORS
- TOP VIEW -


GND
14
13
12
11
10
9
8
1
2
3
4
5
6
7
Vcc (+5V)

LM324N (TI)
QUAD OPERATIOAL AMPLIFIERS
- TOP VIEW -

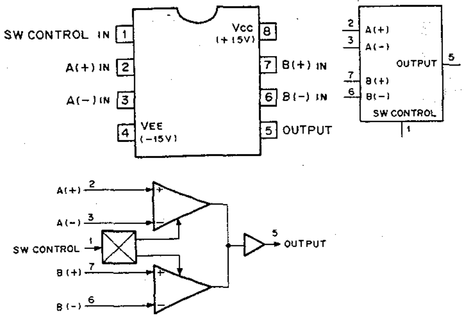

14
13
12
11
10
9
8
GND
(+3to+30V) Vcc
1
2
3
4
5
6
7

LM358P (TI)
DUAL OPERATIONAL AMPLIFIERS
- TOP VIEW -


1
2
3
4
GND
Vcc (+3to+30V)
8
7
6
5

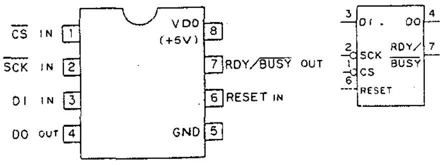
M5201P (MITSUBISHI)

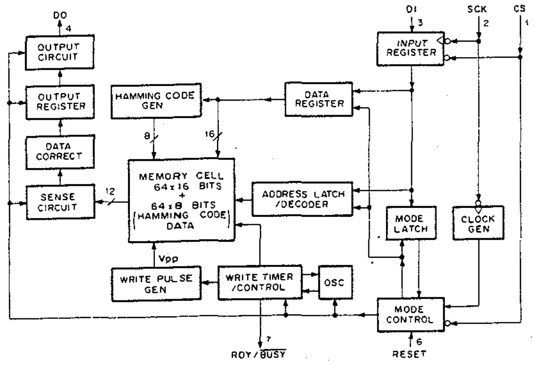
DUAL OPERATIONAL AMPLIFIERS WITH SWITCHED OUTPUT
– TOP VIEW –


SW CONTROL IN 1
A(+) IN 2
A(−) IN 3
4 VEE (−15V)
Vcc (+15V) 8
7 B(+) IN
6 B(−) IN
5 OUTPUT
A(+)
A(−)
OUTPUT
B(+)
B(−)
SW CONTROL
SW CONTROL
5 OUTPUT

M6M80011AP (MITSUBISHI)

C-MOS 1k (64x16) BIT ELECTRICALLY ERASABLE PROM
– TOP VIEW –

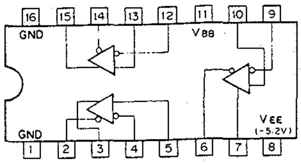

CS IN 1
SCK IN 2
DI IN 3
DO OUT 4
VDD (+5V) 8
7 RDY/BUSY OUT
6 RESET IN
GND 5
DI
DO
SCK
RDY/BUSY
CS
RESET


DO
OUTPUT CIRCUIT
OUTPUT REGISTER
DATA CORRECT
SENSE CIRCUIT
HAMMING CODE GEN
DATA REGISTER
INPUT REGISTER
MEMORY CELL 64x16 BITS + 64x8 BITS (HAMMING CODE DATA)
ADDRESS LATCH /DECODER
MODE LATCH
CLOCK GEN
Vpp
WRITE PULSE GEN
WRITE TIMER /CONTROL
OSC
MODE CONTROL
DI
SCK
CS
RDY/BUSY
RESET

CS . CHIP SELECT INPUT
DI : DATA INPUT
DO : DATA OUTPUT
RDY BUSY : BUSY OUTPUT
RESET : RESET INPUT
SCK . CLOCK INPUT

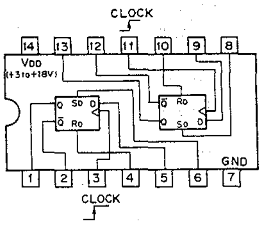
MC10H116M (MOTOROLA) FLAT PACKAGE

ECL TRIPLE DIFFERENTIAL OR/NOR LINE RECEIVERS
– TOP VIEW –


16 15 14 13 12 11 10 9
GND
VBB
VEE (−5.2V)
GND
1 2 3 4 5 6 7 8

HD14013BP (HITACHI)
MC14013BCP (MOTOROLA)
MC14013BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
– TOP VIEW –


CLOCK
14 13 12 11 10 9 8
VDD (+3to+18V)
Q SD
Q RD
RD Q
SD Q
GND
1 2 3 4 5 6 7
CLOCK

DIRECT R-S FLIP-FLOP

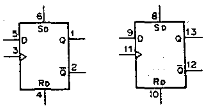
SD	RD	Q	$\overline{Q}$
0	0	Qn	$\overline{Q}$n
0	1	0	1
1	0	1	0
1	1	1	1

D-TYPE FLIP-FLOP

CKn	CKn+1
D	Q
0	0
1	1

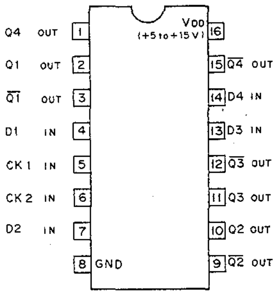
0: LOW LEVEL
1; HIGH LEVEL

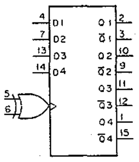
CLOCK CK; _/‾
CKn; BEFORE CLOCK
CKn+1; AFTER CLOCK


6 SD 5 D 3 Q 1 Q̄ 2 RD 4
8 SD 9 D 11 Q 13 Q̄ 12 RD 10

MC14042BCP (MOTOROLA)

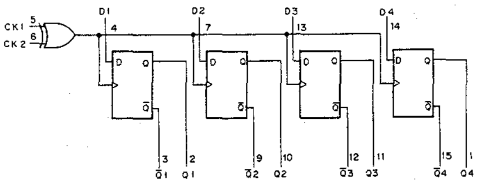
C-MOS D-TYPE LATCH
– TOP VIEW –


Q4 OUT 1
Q1 OUT 2
Q̄1 OUT 3
D1 IN 4
CK1 IN 5
CK2 IN 6
D2 IN 7
8 GND
VDD (+5to+15V) 16
15 Q̄4 OUT
14 D4 IN
13 D3 IN
12 Q̄3 OUT
11 Q3 OUT
10 Q2 OUT
9 Q̄2 OUT


4 D1
7 D2
13 D3
14 D4
5
6
Q1 2
Q̄1 3
Q2 10
Q̄2 9
Q3 11
Q̄3 12
Q4 1
Q̄4 15

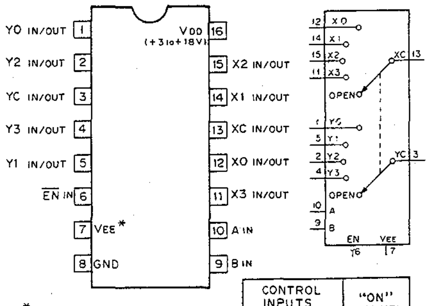
FUNCTION TABLE

CK1	CK2	Q / $\overline{Q}$
0	0	PASS DATA
0	1	LATCH DATA
1	0	LATCH DATA
1	1	PASS DATA


CK1 5
CK2 6
D1 4
D2 7
D3 13
D4 14
D Q
Q̄
3 Q̄1
2 Q1
9 Q̄2
10 Q2
12 Q̄3
11 Q3
15 Q̄4
1 Q4

MC14052BCP (MOTOROLA)
MC14052BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
– TOP VIEW –


Y0 IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3to+18V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 X0 IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN
12 X0
14 X1
15 X2
11 X3
XC 13
OPEN
1 Y0
5 Y1
2 Y2
4 Y3
YC 3
OPEN
10 A
9 B
EN 6
VEE 7

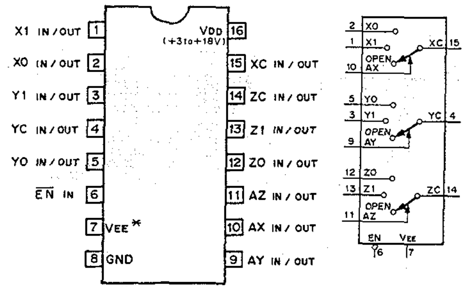
VEE*; VDD − VEE = +3 to +18V

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

MC14053BCP (MOTOROLA)

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
– TOP VIEW –


X1 IN / OUT 1
X0 IN / OUT 2
Y1 IN / OUT 3
YC IN / OUT 4
Y0 IN / OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 to +18V) 16
15 XC IN / OUT
14 ZC IN / OUT
13 Z1 IN / OUT
12 Z0 IN / OUT
11 AZ IN / OUT
10 AX IN / OUT
9 AY IN / OUT
2 X0
1 X1
10 OPEN AX
XC 15
5 Y0
3 Y1
9 OPEN AY
YC 4
12 Z0
13 Z1
11 OPEN AZ
ZC 14
EN 6
VEE 7

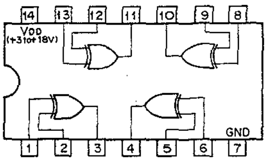
VEE*; VDD − VEE = +3 to +18V

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

CONT. INPUTS		ON CHANNEL
EN	A (X,Y,Z,)	
0	0	0
0	1	1
1	X	OPEN

MC14070BCP (MOTOROLA)

C-MOS QUAD EXCLUSIVE OR GATES
– TOP VIEW –


14
13
12
11
10
9
8
VDD (+3 to 18V)
GND
1
2
3
4
5
6
7

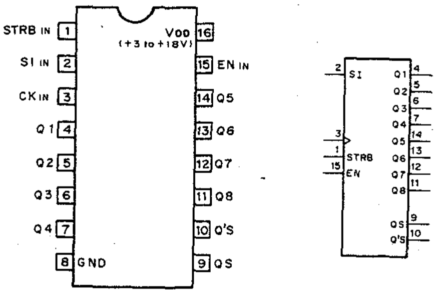
$Y = \overline{A} \cdot B + A \cdot \overline{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

MC14094BCP (MOTOROLA)
MSM4094RS (OKI)

C-MOS 8-STAGE SHIFT-AND-STORE BUS REGISTER
– TOP VIEW –


STRB IN 1
SI IN 2
CK IN 3
Q1 4
Q2 5
Q3 6
Q4 7
8 GND
VDD (+3 to +18V) 16
15 EN IN
14 Q5
13 Q6
12 Q7
11 Q8
10 Q'S
9 QS
2 SI
3
1 STRB
15 EN
Q1 4
Q2 5
Q3 6
Q4 7
Q5 14
Q6 13
Q7 12
Q8 11
QS 9
Q'S 10

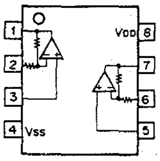
SI	; SERIAL DATA INPUT
CK	; CLOCK INPUT
STRB	; STROBE INPUT
EN	; OUTPUT ENABLE INPUT
Q1 – Q8	; PARALLEL DATA OUTPUTS
QS, Q'S	; SERIAL DATA OUTPUTS

INPUTS				PARALLEL OUT		SERIAL OUT	
CK	EN	STRB	SI	Q1	Qn	QS	Q'S
↑	0	X	X	HI-Z	HI-Z	Q7	NC
↓	0	X	X	HI-Z	HI-Z	NC	Q7
↑	1	0	X	NC	NC	Q7	NC
↑	1	1	0	0	Qn-1	Q7	NC
↑	1	1	1	1	Qn-1	Q7	NC
↓	1	1	1	NC	NC	NC	Q7

1; HIGH
0; LOW
X; DON'T CARE
HI-Z; HIGH IMPEDANCE
NC ; NO CHANGE

MC14576BF (MOTOROLA) FLAT PACKAGE

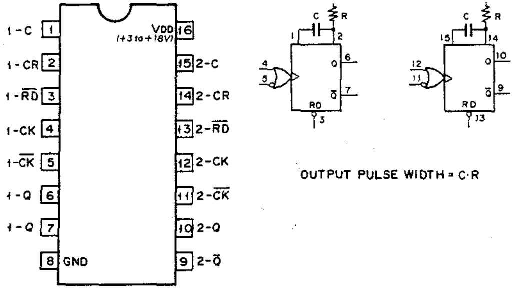
C-MOS DUAL VIDEO AMPLIFIERS
– TOP VIEW –


1
2
3
4 Vss
VDD 8
7
6
5

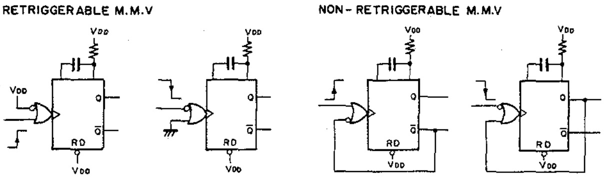
*VDD + | Vss | = +5V to +12V

MC14538BCP (MOTOROLA)
MC14538BF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS
– TOP VIEW –

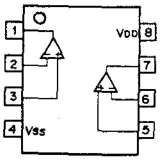

1-C 1
1-CR 2
1-RD 3
1-CK 4
1-CK 5
1-Q 6
1-Q 7
8 GND
VDD (+3 to +18V) 16
15 2-C
14 2-CR
13 2-RD
12 2-CK
11 2-CK
10 2-Q
9 2-Q̄
VDD
C
R
1
2
4
5
Q 6
Q̄ 7
RD
3
VDD
C
R
15
14
12
11
Q 10
Q̄ 9
RD
13

OUTPUT PULSE WIDTH = C·R


RETRIGGERABLE M.M.V
NON-RETRIGGERABLE M.M.V
VDD
Q
Q̄
RD

MC14577BF (MOTOROLA) FLAT PACKAGE

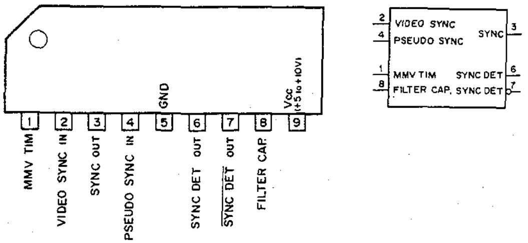
C-MOS DUAL VIDEO AMPLIFIERS
– TOP VIEW –

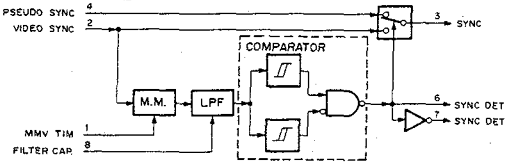

1
2
3
4 Vss
VDD 8
7
6
5

*VDD + | Vss | = +5V to +12V

NJM2220S (JRC)

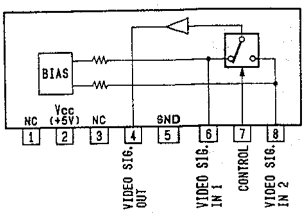
VIDEO SYNC DETECTOR
– SIDE VIEW –


GND
Vcc (+5 to +10V)
1
2
3
4
5
6
7
8
9
MMV TIM
VIDEO SYNC IN
SYNC OUT
PSEUDO SYNC IN
SYNC DET OUT
SYNC DET OUT
FILTER CAP.
2 VIDEO SYNC
4 PSEUDO SYNC
SYNC 3
1 MMV TIM
SYNC DET 6
8 FILTER CAP.
SYNC DET 7


PSEUDO SYNC 4
VIDEO SYNC 2
3 SYNC
COMPARATOR
M.M.
LPF
MMV TIM 1
FILTER CAP. 8
6 SYNC DET
7 SYNC DET

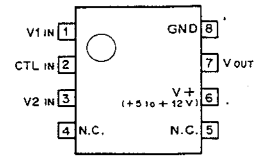
NJM2233BL (JRC)

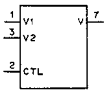
VIDEO SWITCH
– SIDE VIEW –

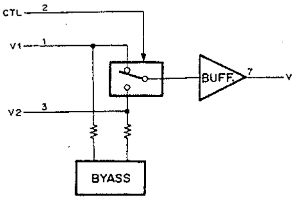

BIAS
NC
Vcc (+5V)
NC
GND
1
2
3
4
5
6
7
8
VIDEO SIG. OUT
VIDEO SIG. IN 1
CONTROL
VIDEO SIG. IN 2

NJM2233BM (JRC) FLAT PACKAGE

2-INPUT VIDEO SIGNAL SWITCH
– TOP VIEW –


V1 IN 1
CTL IN 2
V2 IN 3
4 N.C.
GND 8
7 V OUT
V+ (+5 to +12V) 6
N.C. 5


1 V1
3 V2
2 CTL
V 7

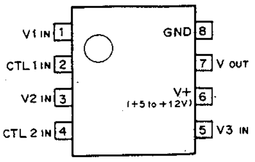

CTL 2
V1 1
V2 3
BUFF.
7
V
BYASS

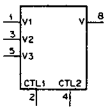
CTL	V
0	V1
1	V2

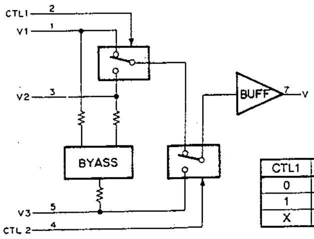
0 : LOW LEVEL
1 : HIGH LEVEL

NJM2234M (JRC) FLAT PACKAGE

3-INPUT VIDEO SIGNAL SWITCH
– TOP VIEW –


V1 IN 1
CTL 1 IN 2
V2 IN 3
CTL 2 IN 4
GND 8
7 V OUT
V+ (+5 to +12V) 6
5 V3 IN


1 V1
3 V2
5 V3
V 8
CTL1 2
CTL2 4

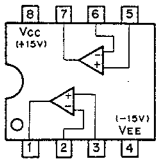

CTL1 2
V1 1
V2 3
BUFF
7
V
BYASS
V3 5
CTL 2 4

CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

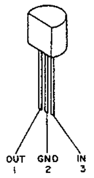
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

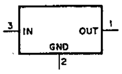
NJM4558D-D (JRC)
NJM4560D (JRC)
NJM4560MD (JRC) FLAT PACKAGE
NJM5532M (JRC) FLAT PACKAGE
RC4558DD (RAYTHEON)
RC4560D (RAYTHEON)
RC5532M (RAYTHEON) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIER
– TOP VIEW –


8
7
6
5
Vcc (+15V)
(–15V) VEE
1
2
3
4

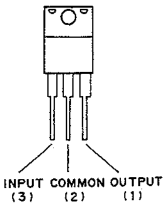
NJM78L05A (JRC) +5V (100mA)
NJM78L09A (JRC) +9V (100mA)
RC78L05A (RAYTHEON) +5V (100mA)
RC78L09A (RAYTHEON) +9V (100mA)
POSITIVE VOLTAGE REGULATOR

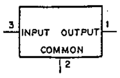

OUT 1
GND 2
IN 3


3 IN
OUT 1
GND 2

NJM7809FA (JRC) +9V
RC7809FA (RAYTHEON) +9V

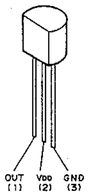
POSITIVE VOLTAGE REGULATOR
– FRONT VIEW –

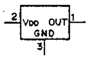

INPUT (3)
COMMON (2)
OUTPUT (1)


3 INPUT
OUTPUT 1
COMMON 2

S-8054HNM (SEIKO I AND E) 4.50V – 4.70V

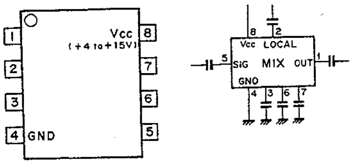
C-MOS VOLTAGE DETECTOR


OUT (1)
VDD (2)
GND (3)


2 VDD
OUT 1
GND 3

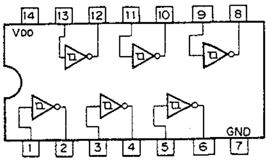
SN16913P (TI)

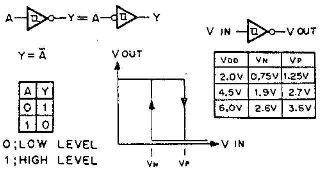
BALANCED MIXER
- TOP VIEW -


Vcc
(+4 to+15V)
GND
1
2
3
4
5
6
7
8
Vcc LOCAL
SIG MIX OUT
GND

SN74HC14AN (TI)

C-MOS HEX SCHMITT TRIGGER INVERTERS
- TOP VIEW -


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7


A
Y = A
Y
Y = $\bar{A}$
V OUT
V IN
V IN
V OUT
VN
VP

A	Y
0	1
1	0

0;LOW LEVEL
1;HIGH LEVEL

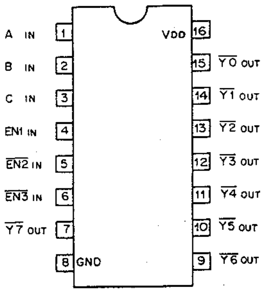
VDD	VN	VP
2.0V	0.75V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

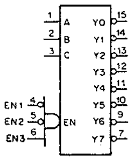
NOTE :

TYPE	VDD
TC74AC14 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

SN74HC138AN (TI)

C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER
- TOP VIEW -


A IN 1
B IN 2
C IN 3
EN1 IN 4
$\overline{EN2}$ IN 5
$\overline{EN3}$ IN 6
$\overline{Y7}$ OUT 7
8 GND
VDD 16
15 $\overline{Y0}$ OUT
14 $\overline{Y1}$ OUT
13 $\overline{Y2}$ OUT
12 $\overline{Y3}$ OUT
11 $\overline{Y4}$ OUT
10 $\overline{Y5}$ OUT
9 $\overline{Y6}$ OUT


1 A
2 B
3 C
EN1 4
EN2 5
EN3 6
EN
Y0 15
Y1 14
Y2 13
Y3 12
Y4 11
Y5 10
Y6 9
Y7 7

NOTE :

TYPE	VDD
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to +5.5V
TC74AC138 TYPE	+2 to +5.5V
OTHER TYPES	+2 to +6V

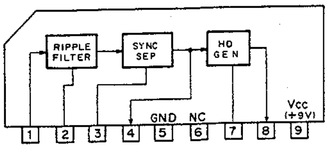
INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

EN = $\overline{EN1} \cdot \overline{EN2} \cdot EN3$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

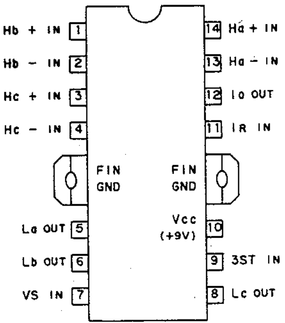
TA7357AP (TOSHIBA)

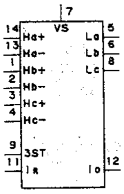
SYNC SEPARATOR/HD PULSE GENERATOR
- SIDE VIEW -


RIPPLE FILTER
SYNC SEP
HD GEN
GND
NC
Vcc
(+9V)
1
2
3
4
5
6
7
8
9

TA7262P-LB (TOSHIBA)

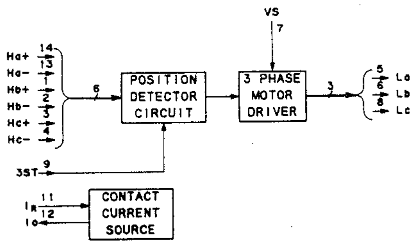
MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR
- TOP VIEW -


Hb + IN 1
Hb - IN 2
Hc + IN 3
Hc - IN 4
La OUT 5
Lb OUT 6
VS IN 7
14 Ha + IN
13 Ha - IN
12 Io OUT
11 IR IN
FIN GND
FIN GND
Vcc
(+9V)
10
9 3ST IN
8 Lc OUT


7
VS
14 Ha+
13 Ha-
1 Hb+
2 Hb-
3 Hc+
4 Hc-
9 3ST
11 IR
5 La
6 Lb
8 Lc
Io 12

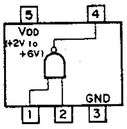
INPUT
3ST ;MOTOR ROTATIONAL DIRECTION CONTROL
Ha,Hb,Hc +/- ;HOLE ELEMENT AMP
IR ;CONTACT CURRENT SOURCE
VS ;MOTOR INPUT VOLTAGE

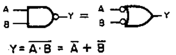
OUTPUT
Io ;CONTACT CURRENT SOURCE
La,Lb,Lc ;3 PHASE MOTOR DRIVE


VS
7
Ha+ 14
Ha- 13
Hb+ 1
Hb- 2
Hc+ 3
Hc- 4
6
POSITION DETECTOR CIRCUIT
3 PHASE MOTOR DRIVER
3
5 La
6 Lb
8 Lc
3ST 9
IR 11
Io 12
CONTACT CURRENT SOURCE

SC7S00F (MOTOROLA) FLAT PACKAGE
TC7S00F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT NAND GATE
- TOP VIEW -


5
4
VDD
(+2V to
+6V)
GND
1
2
3



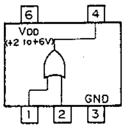
Y = $\overline{A \cdot B} = \bar{A} + \bar{B}$

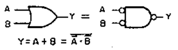
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7S32F (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT OR GATE
- TOP VIEW -


6
4
VDD
(+2 to+6V)
GND
1
2
3



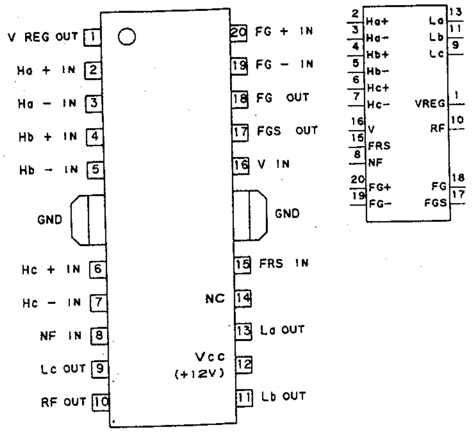
Y = A + B = $\overline{\bar{A} \cdot \bar{B}}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

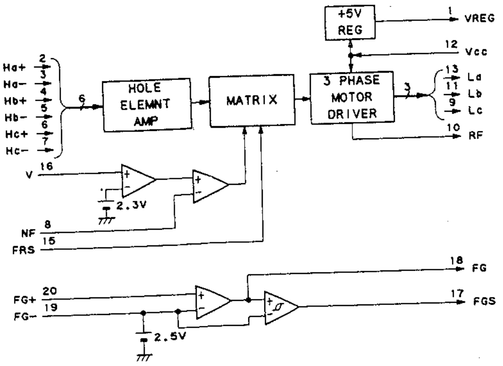
TA8424F (TOSHIBA)

MOTOR DRIVER FOR DIRECT CURRENT COMPACT MOTOR
– TOP VIEW –


V REG OUT 1
Ha + IN 2
Ha – IN 3
Hb + IN 4
Hb – IN 5
GND
Hc + IN 6
Hc – IN 7
NF IN 8
Lc OUT 9
RF OUT 10
20 FG + IN
19 FG – IN
18 FG OUT
17 FGS OUT
16 V IN
GND
15 FRS IN
NC 14
13 La OUT
12
11 Lb OUT
Vcc (+12V)
Ha+ Ha– Hb+ Hb– Hc+ Hc– V FRS NF FG+ FG–
La Lb Lc VREG RF FG FGS

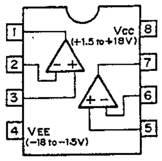
INPUT
FG +/– ;FG INPUT AMP
FRS ;MOTOR ROTATIONAL DIRECTION CONTROL
Ha,Hb,Hc +/– ;HOLE ELEMENT AMP
NF ;FEEDBACK OUTPUT CURRENT
V ;CONTROL VOLTAGE

OUTPUT
FG ;FG GAIN AMP
FGS ;FG HYSTERESIS AMP
La,Lb,Lc ;3 PHASE MOTOR DRIVE
RF ;OUTPUT CURRENT DETECTOR
V REG ;VOLTAGE REGULATOR


+5V REG
VREG
Vcc
Ha+ Ha– Hb+ Hb– Hc+ Hc–
HOLE ELEMNT AMP
MATRIX
3 PHASE MOTOR DRIVER
La Lb Lc
RF
V
2.3V
NF
FRS
FG
FG+
FG–
FGS
2.5V

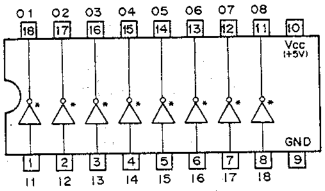
TL082CPS (TI) FLAT PACKAGE

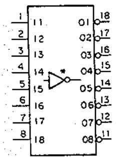
OPERATIONAL AMPLIFIER
(JFET INPUT)
– TOP VIEW –


1
2
3
4
Vcc (+1.5 to +18V)
8
7
6
5
VEE (–18 to –1.5V)

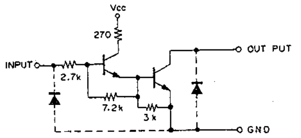
TD62381P (TOSHIBA)

OCTAL LOW SATURATION DRIVER
– TOP VIEW –


O1 O2 O3 O4 O5 O6 O7 O8
18 17 16 15 14 13 12 11 10
Vcc (+5V)
GND
1 2 3 4 5 6 7 8 9
I1 I2 I3 I4 I5 I6 I7 I8

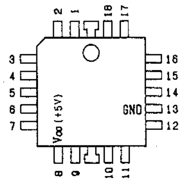

I1 I2 I3 I4 I5 I6 I7 I8
O1 O2 O3 O4 O5 O6 O7 O8

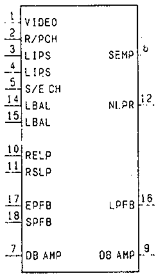
✱; OPEN COLLECTOR


Vcc
270
INPUT
2.7k
7.2k
3k
OUT PUT
GND

VC2076MP (JVC)

Y SIGNAL PROCESSOR FOR VTR
– TOP VIEW –

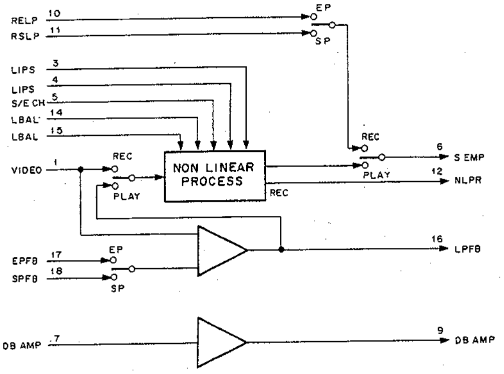



VIDEO
R/PCH
LIPS
LIPS
S/E CH
LBAL
LBAL
RELP
RSLP
EPFB
SPFB
DB AMP
SEMP
NLPR
LPFB
DB AMP

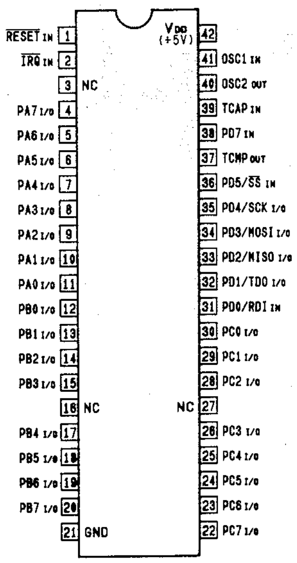
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	VIDEO	10	I	RELP
2	I	R/P CH	11	I	RSLP
3	I	LIPS	12	O	NLPR
4	I	LIPS	13	–	GND
5	I	S/E CH	14	I	LBAL
6	O	S EMP	15	I	LBAL
7	I	DB AMP	16	O	LPFB
8	–	Vcc	17	I	EPFB
9	O	DB AMP	18	I	SPFB

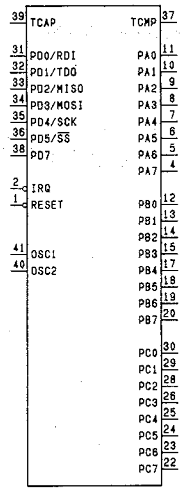
INPUT
DB AMP ; 6dB AMP IN
EPFB ; PB EP LINEAR PROCESS FEEDBACK
LBAL ; LIMITER BALANCE TERMINAL
LIPS ; LIMITER POWER SMOOTHING TERMINAL
R/P CH ; REC/PB CHANGE
RELP ; REC EP LINEAR PROCESS
RSLP ; REC SP LINEAR PROCESS
S/E CH ; SP/EP CHANGE
SPFB ; PB SP LINEAR PROCESS FEEDBACK
VIDEO ; VIDEO IN

OUTPUT
DB AMP ; 6dB AMP OUT
LPFB ; PB LINEAR PROCESS FEEDBACK
NLPR ; NON LINEAR PROCESS
S EMP ; SUB EMPHASIS


RELP 10
RSLP 11
EP
SP
LIPS 3
LIPS 4
S/E CH 5
LBAL 14
LBAL 15
VIDEO 1
REC
PLAY
NON LINEAR PROCESS
REC
REC
PLAY
6 S EMP
12 NLPR
16 LPFB
EPFB 17
SPFB 18
EP
SP
DB AMP 7
9 DB AMP

MC68HC05C4 (MOTOROLA)
C-MOS 8-BIT MICROCONTROLLER UNIT
– TOP VIEW –

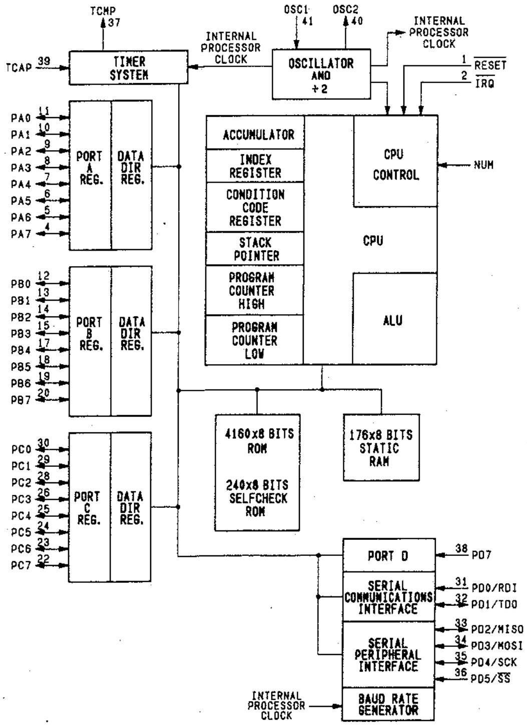

RESET IN 1
IRQ IN 2
3 NC
PA7 I/O 4
PA6 I/O 5
PA5 I/O 6
PA4 I/O 7
PA3 I/O 8
PA2 I/O 9
PA1 I/O 10
PA0 I/O 11
PB0 I/O 12
PB1 I/O 13
PB2 I/O 14
PB3 I/O 15
16 NC
PB4 I/O 17
PB5 I/O 18
PB6 I/O 19
PB7 I/O 20
21 GND
VDD (+5V) 42
41 OSC1 IN
40 OSC2 OUT
39 TCAP IN
38 PD7 IN
37 TCMP OUT
36 PD5/SS IN
35 PD4/SCK I/O
34 PD3/MOSI I/O
33 PD2/MISO I/O
32 PD1/TDO I/O
31 PD0/RDI IN
30 PC0 I/O
29 PC1 I/O
28 PC2 I/O
NC 27
26 PC3 I/O
25 PC4 I/O
24 PC5 I/O
23 PC6 I/O
22 PC7 I/O


39 TCAP
TCMP 37
31 PD0/RDI
32 PD1/TDO
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
38 PD7
2 IRQ
1 RESET
41 OSC1
40 OSC2
PA0 11
PA1 10
PA2 9
PA3 8
PA4 7
PA5 6
PA6 5
PA7 4
PB0 12
PB1 13
PB2 14
PB3 15
PB4 17
PB5 18
PB6 19
PB7 20
PC0 30
PC1 29
PC2 28
PC3 26
PC4 25
PC5 24
PC6 23
PC7 22

INPUT
IRQ ; INTERRUPT REQUEST
OSC1 ; OSCILLATOR FREQUENCY
PD0 – PD5, PD7 ; PROGRAMMABLE D PORT
RDI ; RECEIVING DATA
RESET ; RESET
SS ; SUB SELECT
TCAP ; CAPTURE FEATURE FOR THE ON-CHIP PROGRAMMABLE TIMER

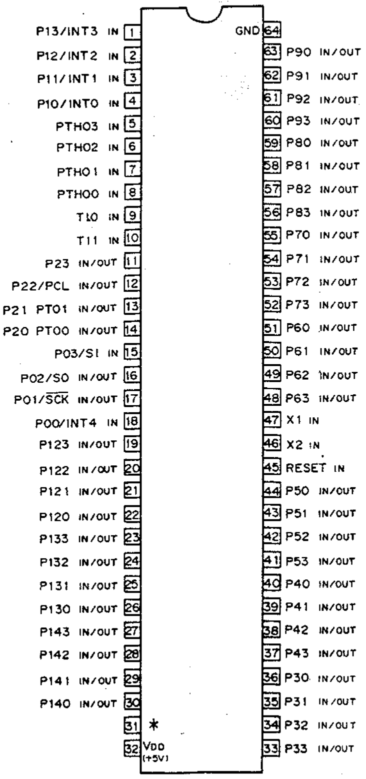
OUTPUT
OSC2 ; OSCILLATOR FREQUENCY
SCK ; SERIAL CLOCK
TCMP ; COMPARE FEATURE OF THE ON-CHIP TIMER
TDO ; TRANSMITION DATA

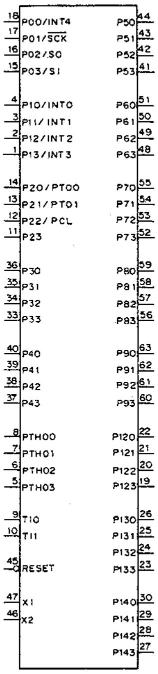
INPUT/OUTPUT
MISO ; MASTER INPUT, SUB OUTPUT
MOSI ; MASTER OUTPUT, SUB INPUT
PA0 – PA7 ; PROGRAMMABLE A PORT
PB0 – PB7 ; PROGRAMMABLE B PORT
PC0 – PC7 ; PROGRAMMABLE C PORT


TCMP 37
OSC1 41
OSC2 40
TCAP 39
TIMER SYSTEM
INTERNAL PROCESSOR CLOCK
OSCILLATOR AND ÷2
INTERNAL PROCESSOR CLOCK
1 RESET
2 IRQ
PA0 11
PA1 10
PA2 9
PA3 8
PA4 7
PA5 6
PA6 5
PA7 4
PORT A REG.
DATA DIR REG.
ACCUMULATOR
INDEX REGISTER
CONDITION CODE REGISTER
STACK POINTER
PROGRAM COUNTER HIGH
PROGRAM COUNTER LOW
CPU CONTROL
NUM
CPU
ALU
PB0 12
PB1 13
PB2 14
PB3 15
PB4 17
PB5 18
PB6 19
PB7 20
PORT B REG.
DATA DIR REG.
4160x8 BITS ROM
240x8 BITS SELFCHECK ROM
176x8 BITS STATIC RAM
PC0 30
PC1 29
PC2 28
PC3 26
PC4 25
PC5 24
PC6 23
PC7 22
PORT C REG.
DATA DIR REG.
PORT D
38 PD7
SERIAL COMMUNICATIONS INTERFACE
31 PD0/RDI
32 PD1/TDO
SERIAL PERIPHERAL INTERFACE
33 PD2/MISO
34 PD3/MOSI
35 PD4/SCK
36 PD5/SS
INTERNAL PROCESSOR CLOCK
BAUD RATE GENERATOR

UPD75108CW (NEC)

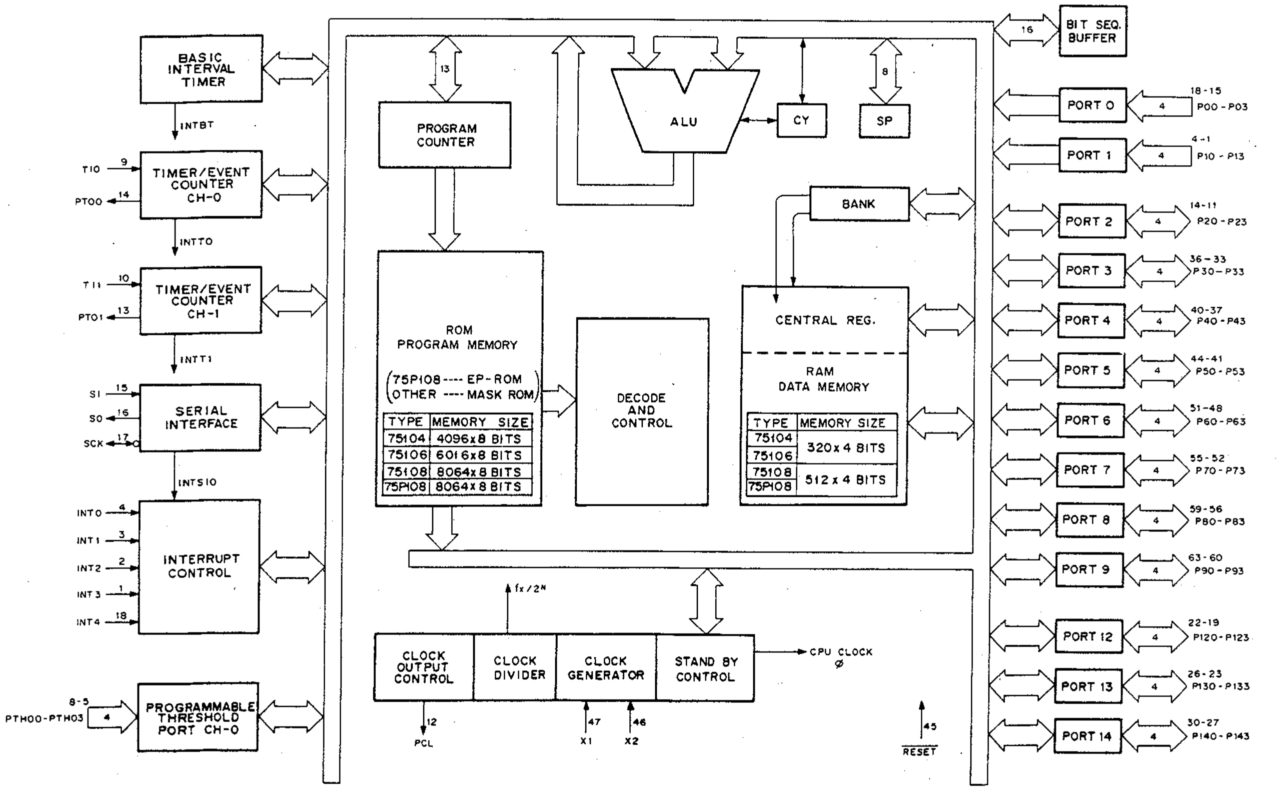
C-MOS 1 CHIP 4-BIT MICROCOMPUTER
– TOP VIEW –


P13/INT3 IN 1
P12/INT2 IN 2
P11/INT1 IN 3
P10/INT0 IN 4
PTH03 IN 5
PTH02 IN 6
PTH01 IN 7
PTH00 IN 8
TI0 IN 9
TI1 IN 10
P23 IN/OUT 11
P22/PCL IN/OUT 12
P21 PTO1 IN/OUT 13
P20 PTO0 IN/OUT 14
P03/SI IN 15
P02/SO IN/OUT 16
P01/SCK IN/OUT 17
P00/INT4 IN 18
P123 IN/OUT 19
P122 IN/OUT 20
P121 IN/OUT 21
P120 IN/OUT 22
P133 IN/OUT 23
P132 IN/OUT 24
P131 IN/OUT 25
P130 IN/OUT 26
P143 IN/OUT 27
P142 IN/OUT 28
P141 IN/OUT 29
P140 IN/OUT 30
31 *
32 VDD (+5V)
GND 64
63 P90 IN/OUT
62 P91 IN/OUT
61 P92 IN/OUT
60 P93 IN/OUT
59 P80 IN/OUT
58 P81 IN/OUT
57 P82 IN/OUT
56 P83 IN/OUT
55 P70 IN/OUT
54 P71 IN/OUT
53 P72 IN/OUT
52 P73 IN/OUT
51 P60 IN/OUT
50 P61 IN/OUT
49 P62 IN/OUT
48 P63 IN/OUT
47 X1 IN
46 X2 IN
45 RESET IN
44 P50 IN/OUT
43 P51 IN/OUT
42 P52 IN/OUT
41 P53 IN/OUT
40 P40 IN/OUT
39 P41 IN/OUT
38 P42 IN/OUT
37 P43 IN/OUT
36 P30 IN/OUT
35 P31 IN/OUT
34 P32 IN/OUT
33 P33 IN/OUT

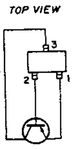

18 P00/INT4
17 P01/SCK
16 P02/SO
15 P03/SI
4 P10/INT0
3 P11/INT1
2 P12/INT2
1 P13/INT3
14 P20/PTO0
13 P21/PTO1
12 P22/PCL
11 P23
36 P30
35 P31
34 P32
33 P33
40 P40
39 P41
38 P42
37 P43
8 PTH00
7 PTH01
6 PTH02
5 PTH03
9 TI0
10 TI1
45 RESET
47 X1
46 X2
P50 44
P51 43
P52 42
P53 41
P60 51
P61 50
P62 49
P63 48
P70 55
P71 54
P72 53
P73 52
P80 59
P81 58
P82 57
P83 56
P90 63
P91 62
P92 61
P93 60
P120 22
P121 21
P122 20
P123 19
P130 26
P131 25
P132 24
P133 23
P140 30
P141 29
P142 28
P143 27

INT0 – INT4	; INTERRUPT INPUTS
P00 – P03	; 4-BIT INPUT PORT (PORT0)
P10 – P13	; 4-BIT INPUT PORT (PORT1)
P20 – P23	; 4-BIT I/O PORT (PORT2)
P30 – P33	; 4-BIT I/O PORT (PORT3), PROGRAMMABLE
P40 – P43	; 4-BIT I/O PORT (PORT4)
P50 – P53	; 4-BIT I/O PORT (PORT5)
P60 – P63	; 4-BIT I/O PORT (PORT6), PROGRAMMABLE
P70 – P73	; 4-BIT I/O PORT (PORT7)
P80 – P83	; 4-BIT I/O PORT (PORT8)
P90 – P93	; 4-BIT I/O PORT (PORT9)
P120 – P123	; 4-BIT I/O PORT (PORT12), OPEN DRAIN
P130 – P133	; 4-BIT I/O PORT (PORT13), OPEN DRAIN
P140 – P143	; 4-BIT I/O PORT (PORT14), OPEN DRAIN
PCL	; CLOCK OUTPUT, PROGRAMABLE
PTH00 – PTH03	; THRESHOLD 4-BIT ANALOG INPUT PORT, PROGRAMABLE
PTO0	; TIMER/EVENT COUNTER OUTPUT (CH-1)
PTO1	; TIMER/EVENT COUNTER OUTPUT (CH-2)
RESET	; SYSTEM RESET INPUT
SI	; SERIAL INTERFACE DATA INPUT
SO	; SERIAL INTERFACE DATA OUTPUT
SCK	; SERIAL INTERFACE CLOCK INPUT/OUTPUT
TI0	; TIMER/EVENT COUNTER CLOCK INPUT (CH-0)
TI1	; TIMER/EVENT COUNTER CLOCK INPUT (CH-1)
X1, X2	; CONNECTED CRYSTAL FOR SYSTEM CLOCK GENERATE

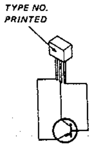
*; PIN31
Vpp(+5V) ; 75P108 TYPE
NC ; OTHER TYPES


BASIC INTERVAL TIMER
INTBT
TI0 9
PTO0 14
TIMER/EVENT COUNTER CH-0
INTT0
TI1 10
PTO1 13
TIMER/EVENT COUNTER CH-1
INTT1
SI 15
SO 16
SCK 17
SERIAL INTERFACE
INTSIO
INT0 4
INT1 3
INT2 2
INT3 1
INT4 18
INTERRUPT CONTROL
8-5
PTH00-PTH03
4
PROGRAMMABLE THRESHOLD PORT CH-0
13
PROGRAM COUNTER
ALU
CY
SP
8
BANK
CENTRAL REG.
RAM DATA MEMORY
TYPE | MEMORY SIZE
75104 / 75106 | 320 x 4 BITS
75108 / 75P108 | 512 x 4 BITS
ROM PROGRAM MEMORY
(75P108 ---- EP-ROM
OTHER ---- MASK ROM)
TYPE | MEMORY SIZE
75104 | 4096x8 BITS
75106 | 6016x8 BITS
75108 | 8064x8 BITS
75P108 | 8064x8 BITS
DECODE AND CONTROL
fx/2ᴺ
CLOCK OUTPUT CONTROL
CLOCK DIVIDER
CLOCK GENERATOR
STAND BY CONTROL
CPU CLOCK Ø
12
PCL
47
X1
46
X2
45
RESET
16
BIT SEQ. BUFFER
PORT 0 4 18-15 P00-P03
PORT 1 4 4-1 P10-P13
PORT 2 4 14-11 P20-P23
PORT 3 4 36-33 P30-P33
PORT 4 4 40-37 P40-P43
PORT 5 4 44-41 P50-P53
PORT 6 4 51-48 P60-P63
PORT 7 4 55-52 P70-P73
PORT 8 4 59-56 P80-P83
PORT 9 4 63-60 P90-P93
PORT 12 4 22-19 P120-P123
PORT 13 4 26-23 P130-P133
PORT 14 4 30-27 P140-P143

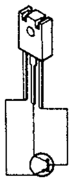
TRANSISTOR


TOP VIEW
3
2
1

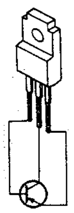
2SA1162
2SA1162G
2SA812


TYPE NO. PRINTED

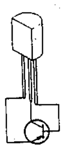
2SA1175



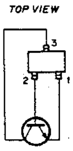
2SB1142



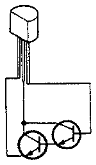
2SB1370



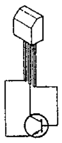
2SB733
2SB739


TOP VIEW
3
2
1

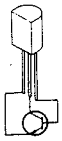
2SC1623
2SC2712G
2SC3326N
2SD1781K



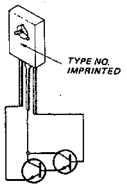
2SD1111



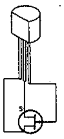
2SD774



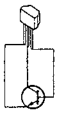
2SD788


TYPE NO. IMPRINTED

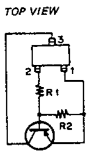
2SD894



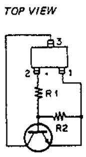
2SK523



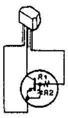
2SC3327


TOP VIEW
3
2
1
R1
R2

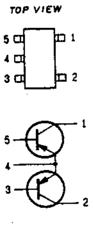
DTA114EK (R1 = 10K, R2 = 10K)
DTA144EK (R1 = 47K, R2 = 47K)
DTB143EK (R1 = 4.7K, R2 = 4.7K)


TOP VIEW
3
2
1
R1
R2

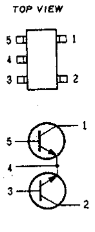
DTC114YK (R1 = 10K, R2 = 47K)
DTC124EK (R1 = 22K, R2 = 22K)
DTC144EK (R1 = 47K, R2 = 47K)



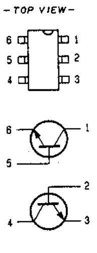
DTC144ES (R1 = 47K, R2 = 47K)


TOP VIEW
5
4
3
1
2
1
5
4
3
2

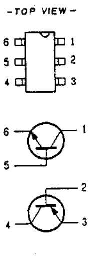
FMS1FE


TOP VIEW
5
4
3
1
2
1
5
4
3
2

FMW1

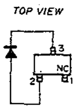

-TOP VIEW-
6
5
4
1
2
3
6
1
5
2
4
3

IMX1

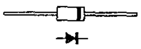

-TOP VIEW-
6
5
4
1
2
3
6
1
5
2
4
3

IMZ1

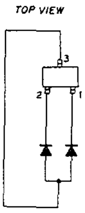
DIODE, PHOTO-COUPLER


TOP VIEW
3
NC
2
1

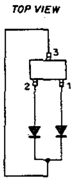
SB05-05CP



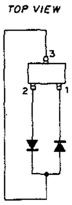
10E-2
1SS119


TOP VIEW
3
2
1

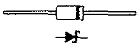
1S2835
1S2836


TOP VIEW
3
2
1

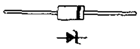
1S2837
MA152WK


TOP VIEW
3
2
1

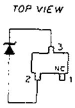
1SS123
1SS226



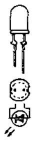
1SS99
ERB81-004



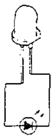
RD ? ?ES
RD ? ?ESB
RD ? ?FB ?


TOP VIEW
3
NC
2
1

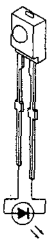
RD ? ?M



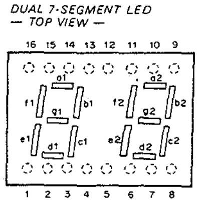
TLUG154 ; GREEN

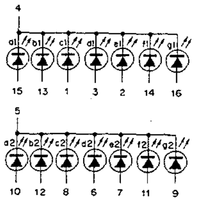


GL-5HD8 ; RED

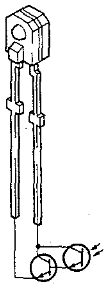


GL451V ; INFRARED

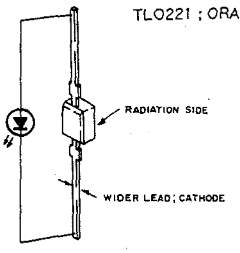

DUAL 7-SEGMENT LED
— TOP VIEW —
16 15 14 13 12 11 10 9
a1
a2
f1
b1
f2
b2
g1
g2
e1
c1
e2
c2
d1
d2
1 2 3 4 5 6 7 8


4
a1
b1
c1
d1
e1
f1
g1
15 13 1 3 2 14 16
5
a2
b2
c2
d2
e2
f2
g2
10 12 8 6 7 11 9

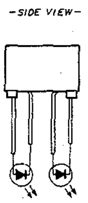
LB402VK (ROHM)



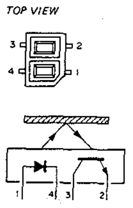
PT483F1


RADIATION SIDE
WIDER LEAD ; CATHODE

TLO221 ; ORANGE



LT-9200D ; RED
LT-9200N ; YELLOWISH GREEN


TOP VIEW
3
2
4
1
1
4
3
2

GP-2S09

SECTION 14
BOARD LAYOUTS AND SCHEMATIC DIAGRAMS

CIRCUIT FUNCTION OF THE PRINTED CIRCUIT BOARD

	Board	Circuit Function	Page
A	AC-148	AC Input	14-50
	AH-28	Audio/CTL Head	14-52
	AU-179C	AFM Process/Normal Audio Process	14-20
C	CM-14	Cassette Compartment Motor	14-50
	CP-223	Connection of Rear Connector	14-48
	CR-42	Chroma Process	14-4
D	DP-166	Counter Display	14-42
	DR-153 (a)	T-Reel Driver	14-47
	DR-153 (b)	S-Reel Driver	14-47
	DR-167	Cam Mode Detect & Drum Motor Driver	14-44
	DR-176A	Capstan FG Amp & Capstan Motor Driver	14-45
	DUS-445	Direction & Stop Detect	14-35
	DUS-535	CTL Head Amp	14-39
	DUS-544	Capacitor for T-Brake Solenoid	14-44
	DUS-592	N-VHS Signal Filter	14-18
H	HN-160	Connection	14-46
	HN-182	Connection (Servo)	14-50
	HP-56	Headphones Connector	14-52
K	KY-229C	Function Key/LED/Switch	14-42
L	LD-35	Loading Motor	14-50
	LE-80	Tape Top/End LED	14-46
	LE-86	Tension Regulator LED	14-46
N	NR-40A	Noise Reducer	14-10
R	RP-62E	Video & AFM Head Amp	14-2
S	SE-151	Tape End Sensor	14-44
	SE-152	Tape Top Sensor	14-46
	SE-159	Tension Regulator CDS Detect	14-46
	SS-49E (inc. DUS-445/535)	Servo & System Control	14-32
	SW-514C	Select Switch	14-50
	SW-532A	TIMER REC/TIMER PLAY Switch	14-50
	SW-574	Audio Signal Selector	14-52
V	VO-37C (inc. DUS-592)	Y/C Video Process	14-14

In the schematic diagrams, the following marks are described near by reference number.
These are parts data at factory.

CAPACITOR (C)

AL	ELECTROLYTIC
AS	
TA	TANTALUM
CA	CERAMIC
CC	
CCS	
CM	
CS	
MPS	MYLAR
PP	
PS	
PT	
MD	DIPPED MICA
MS	MICA

RESISTOR (R)
VARIABLE RESISTOR (RV)

RC	CARBON
RD	
RF	FUSE
RN	METAL
RS	
RW	WIERWOUND

The mentioned items at waveform photograph of this section are measurement point (board location) and machine operation mode.

In the schematic diagrams, the following marks are described near by reference number.
These are parts data at factory.

CAPACITOR (C)

AL	ELECTROLYTIC
AS	
TA	TANTALUM
CA	CERAMIC
CC	
CCS	
CM	
CS	
MPS	MYLAR
PP	
PS	
PT	
MD	DIPPED MICA
MS	MICA

RESISTOR (R)
VARIABLE RESISTOR (RV)

RC	CARBON
RD	
RF	FUSE
RN	METAL
RS	
RW	WIERWOUND

The mentioned items at waveform photograph of this section are measurement point (board location) and machine operation mode.

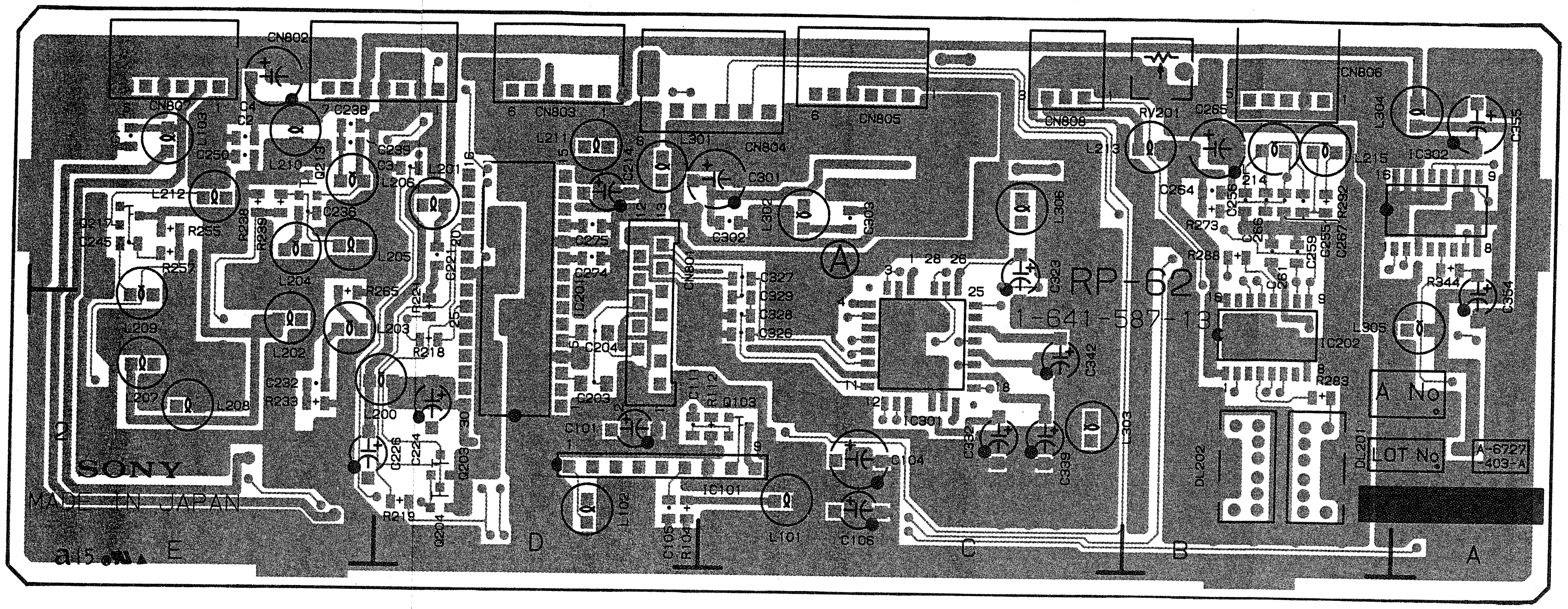
RP-62E ; VIDEO & AFM HEAD AMP

Serial No. 10681 and higher

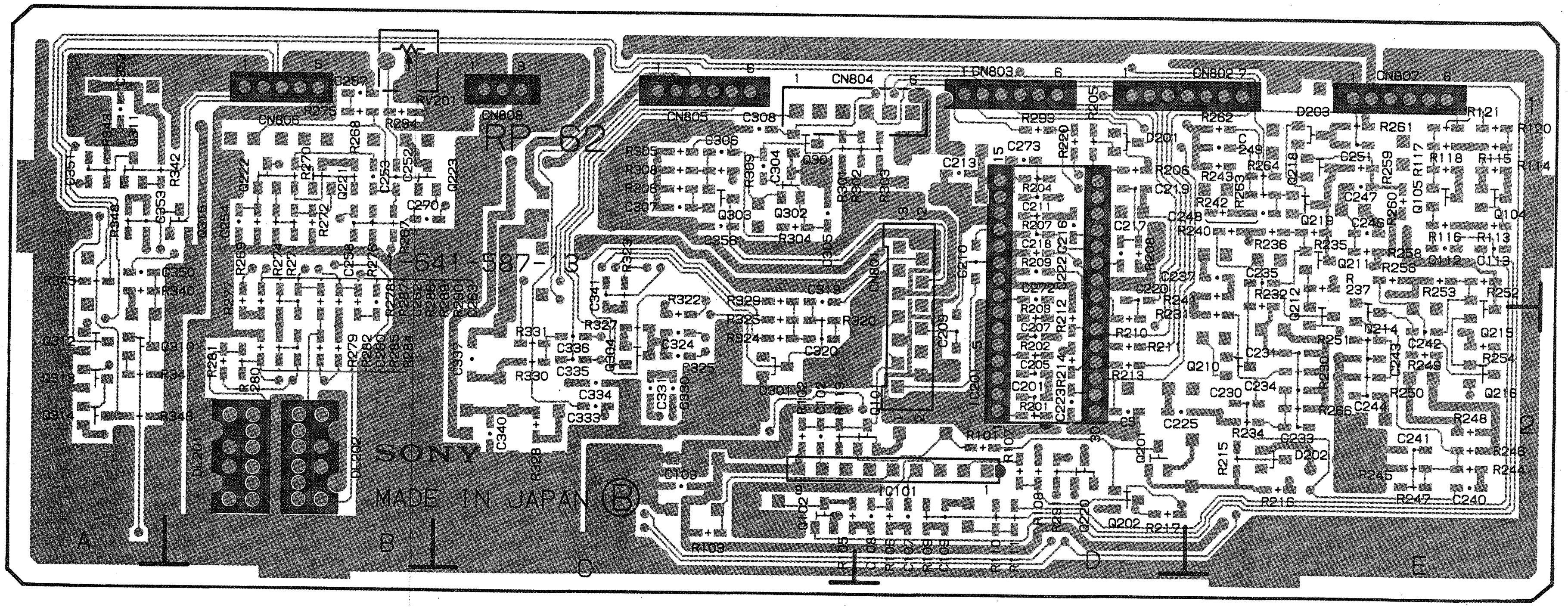
RP-62E (1-641-587-13)

CN801	D-1
CN802	E-1
CN803	D-1
CN804	C-1
CN805	C-1
CN806	B-1
CN807	E-1
CN808	C-1
D201	D-1 *
D203	E-1 *
D301	C-2 *
DL201	B-2
DL202	B-2
IC201	D-2
IC202	B-2
IC301	C-2
IC302	A-1
Q210	E-2 *
Q211	E-1 *
Q212	E-2 *
Q213	E-1
Q214	E-2 *
Q215	E-2 *
Q216	E-2 *
Q217	E-1
Q218	E-1 *
Q219	E-1 *
Q220	D-2 *
Q221	B-1 *
Q222	B-1 *
Q223	C-1 *
Q310	A-2 *
Q311	A-1 *
Q312	A-2 *
Q313	A-2 *
Q314	A-2 *
Q315	B-1 *
RV201	B-1

* mark ; B SIDE mount

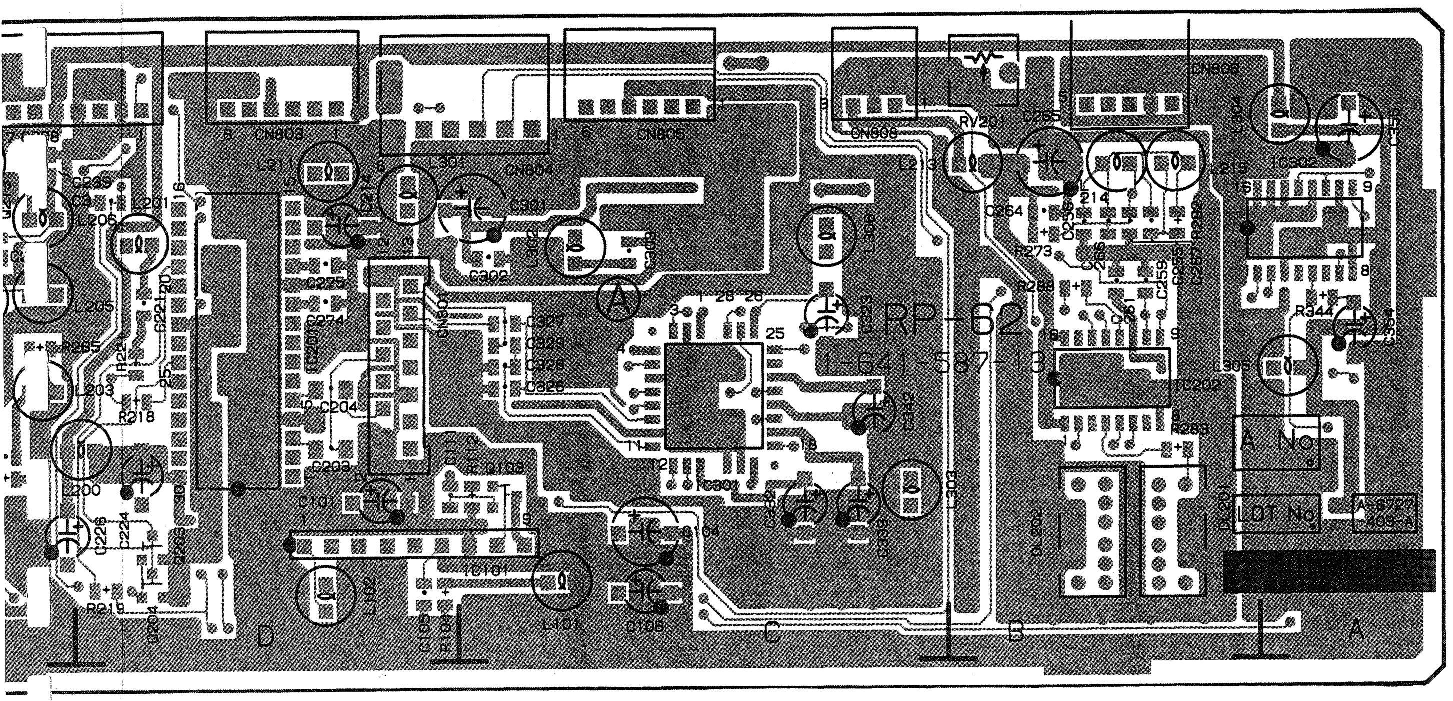

CN802
CN801
CN803
CN804
CN805
CN808
CN806
RV201
IC302
IC202
IC201
IC301
IC101
DL201
DL202
RP-62
1-641-587-13
A No.
LOT No.
A-6727-403-A
SONY
MADE IN JAPAN
E
D
C
B
A
1
2

RP-62E — A SIDE —
1-641-587-13 (1)
SVP-9020

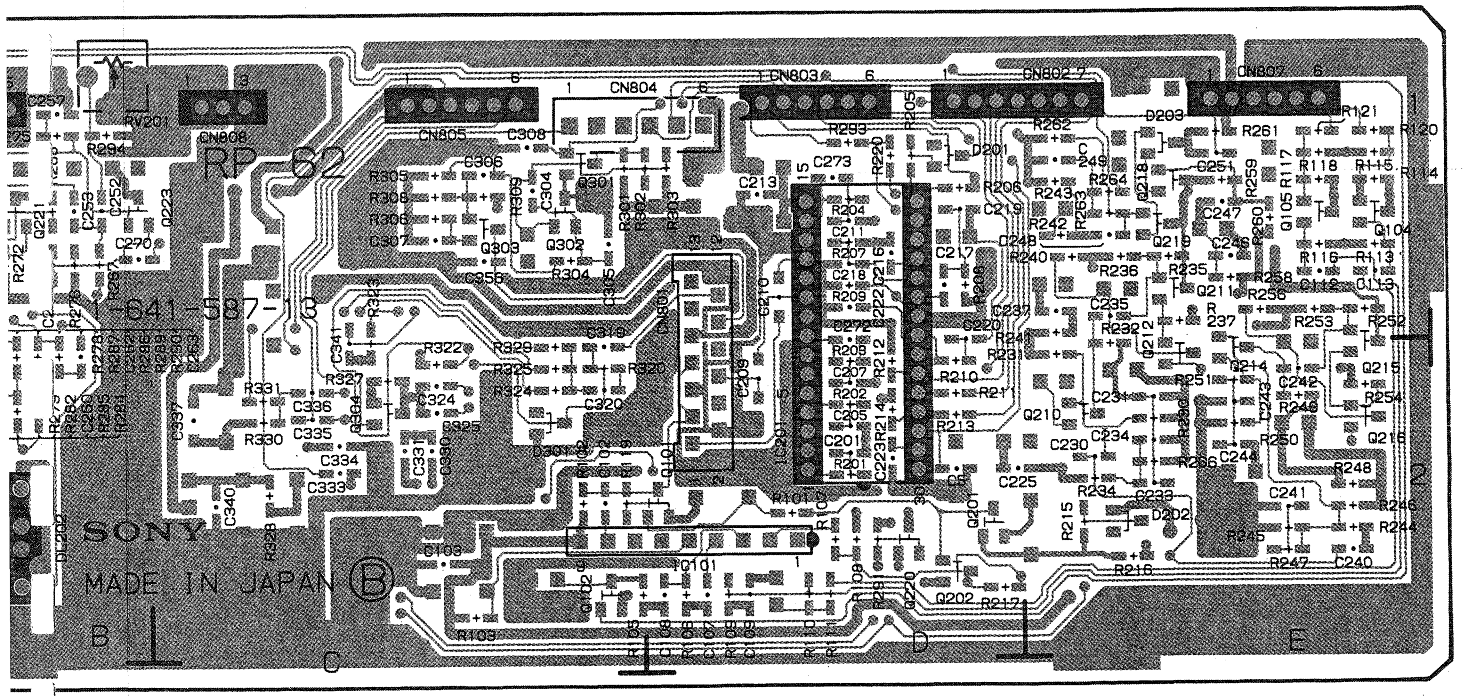

CN806
CN808
RV201
CN805
CN804
CN803
CN802
CN807
RP-62
1-641-587-13
DL201
DL202
SONY
MADE IN JAPAN
IC101
A
B
C
D
E
1
2

RP-62E — B SIDE —
1-641-587-13 (1)
SVP-9020

RP-62E


CN803
CN804
CN805
CN806
CN809
RP-62
1-641-587-13
IC101
IC201
IC202
IC302
DL202
A No.
LOT No.
A
B
C
D

RP-62E — A SIDE —
1-641-587-13 (1)
SVP-9020


CN808
CN805
CN804
CN803
CN802
CN807
RP-62
1-641-587-13
SONY
MADE IN JAPAN
IC101
B
C
D
E

RP-62E — B SIDE —
1-641-587-13 (1)
SVP-9020

14-2 (b)

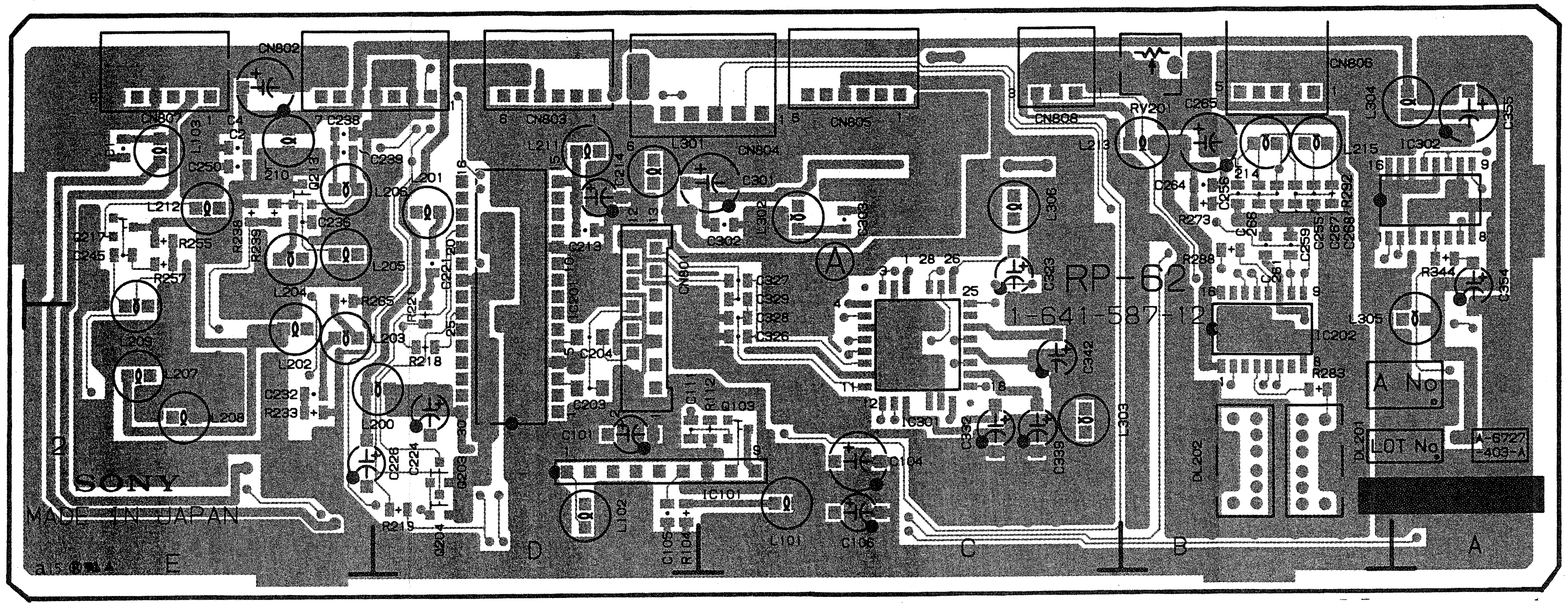
RP-62E; VIDEO & AFM HEAD AMP

Serial No. 10001-10680

RP-62E (1-641-587-12)

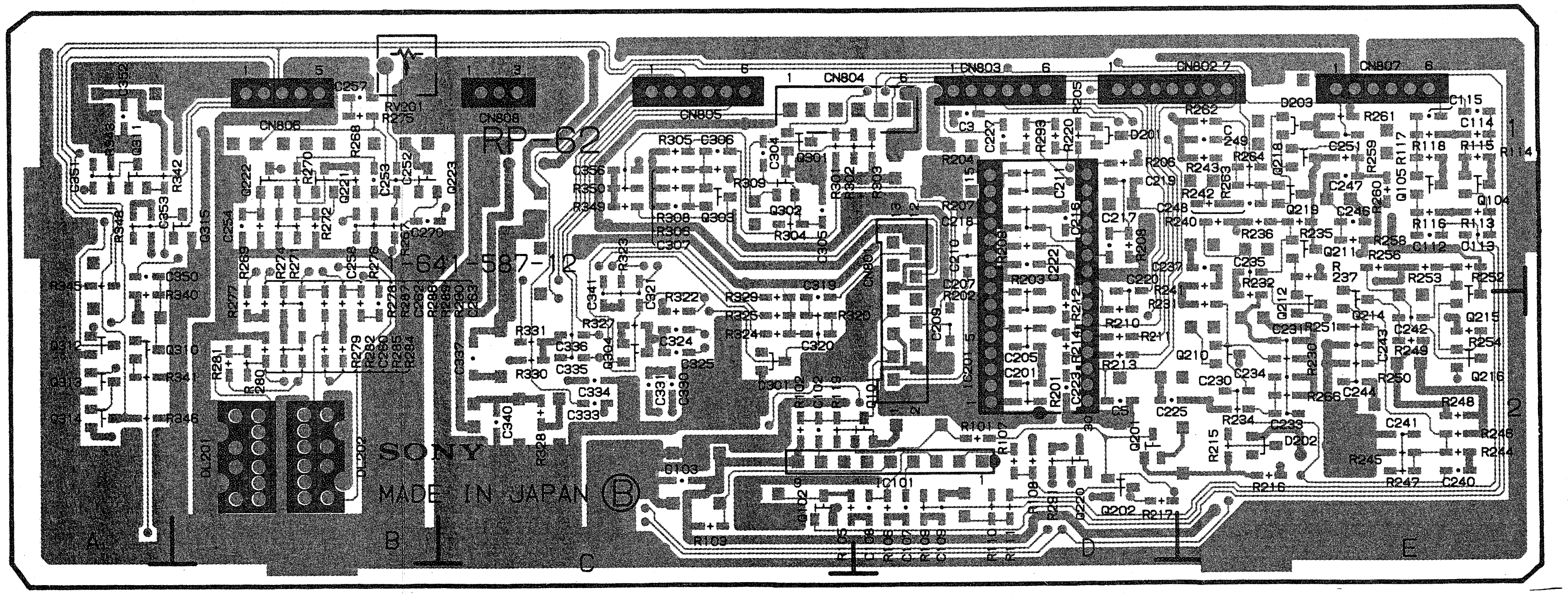
CN801	D-1	
CN802	E-1	
CN803	D-1	
CN804	C-1	
CN805	C-1	
CN806	B-1	
CN807	E-1	
CN808	C-1	
D201	D-1	*
D203	E-1	*
D301	C-2	*
DL201	B-2	
DL202	B-2	
IC201	D-2	
IC202	B-2	
IC301	C-2	
IC302	A-1	
Q210	E-2	*
Q211	E-1	*
Q212	E-2	*
Q213	E-1	
Q214	E-2	*
Q215	E-2	*
Q216	E-2	*
Q217	E-1	
Q218	E-1	*
Q219	E-1	*
Q220	D-2	*
Q221	B-1	*
Q222	B-1	*
Q223	C-1	*
Q310	A-2	*
Q311	A-1	*
Q312	A-2	*
Q313	A-2	*
Q314	A-2	*
Q315	B-1	*
RV201	B-1	

* mark ; B SIDE mount



CN801
CN802
CN803
CN804
CN805
CN806
CN807
CN808
RP-62
1-641-587-12
SONY
MADE IN JAPAN
A No
LOT No.
A-6727-403-A
IC101
IC202
IC301
IC302
A
B
C
D
E

RP-62E — A SIDE —
1-641-587-12 (1)
SVP-9020

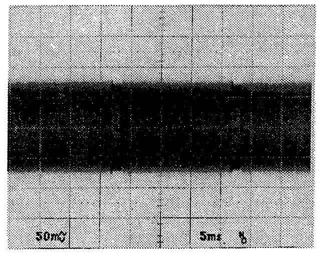


CN802
CN803
CN804
CN805
CN806
CN807
CN808
RV201
RP-62
1-641-587-12
DL201
DL202
IC101
SONY
MADE IN JAPAN
A
B
C
D
E

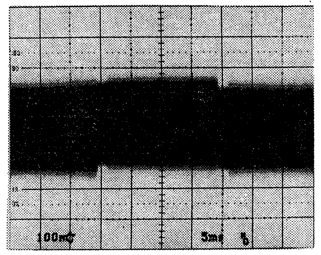
RP-62E — B SIDE —
1-641-587-12 (1)
SVP-9020

RP-62E; VIDEO & AFM HEAD AMP

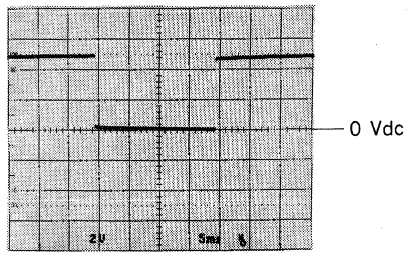
① CN804 pin 2 (C-1) PB mode (S)
CN804 pin 5 (C-1) (TRIG)



② CN804 pin 4 (C-1) PB mode (N)
CN804 pin 5 (C-1) (TRIG)



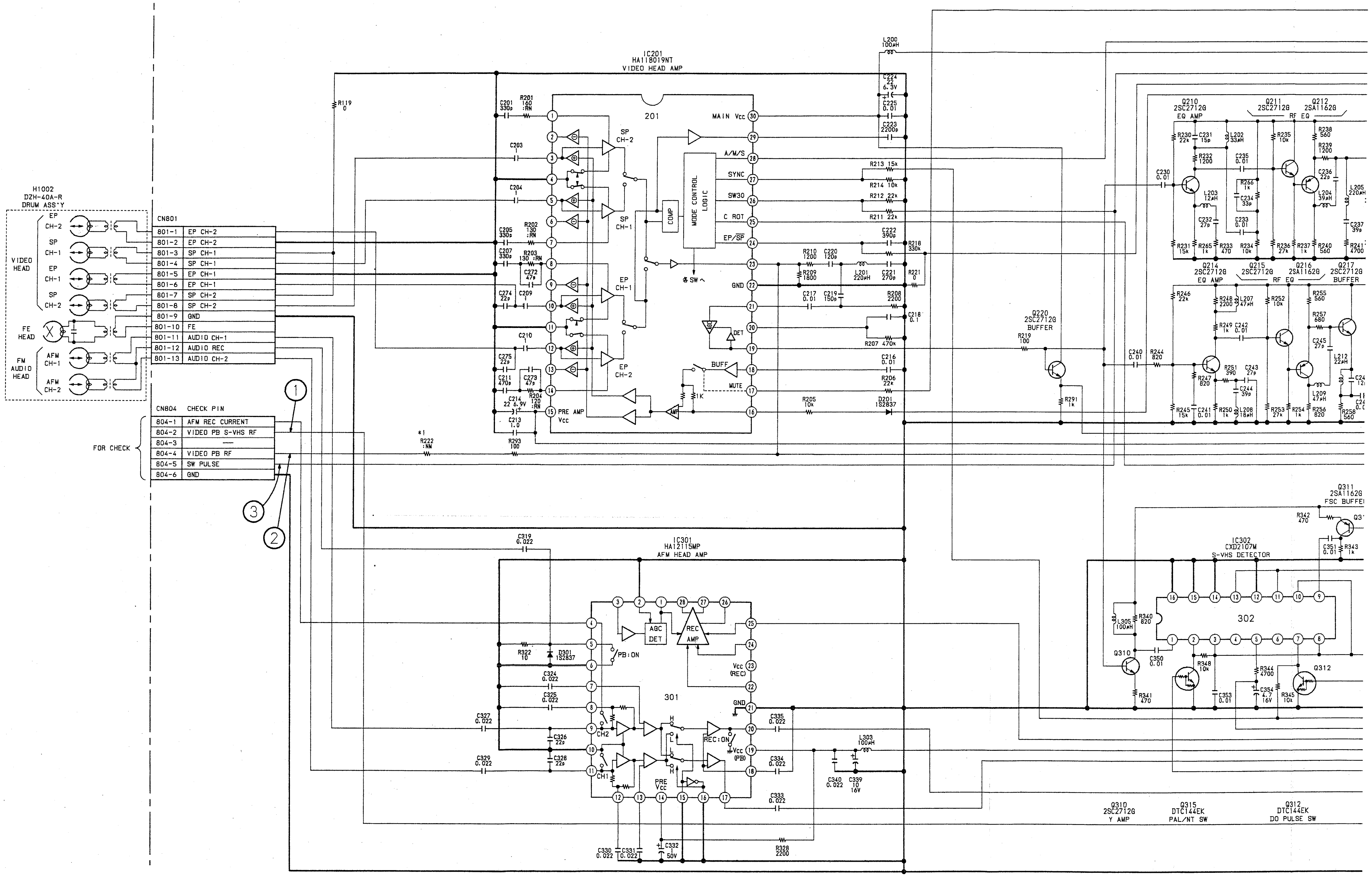
③ CN804 pin 5 (C-1) REC/PB mode

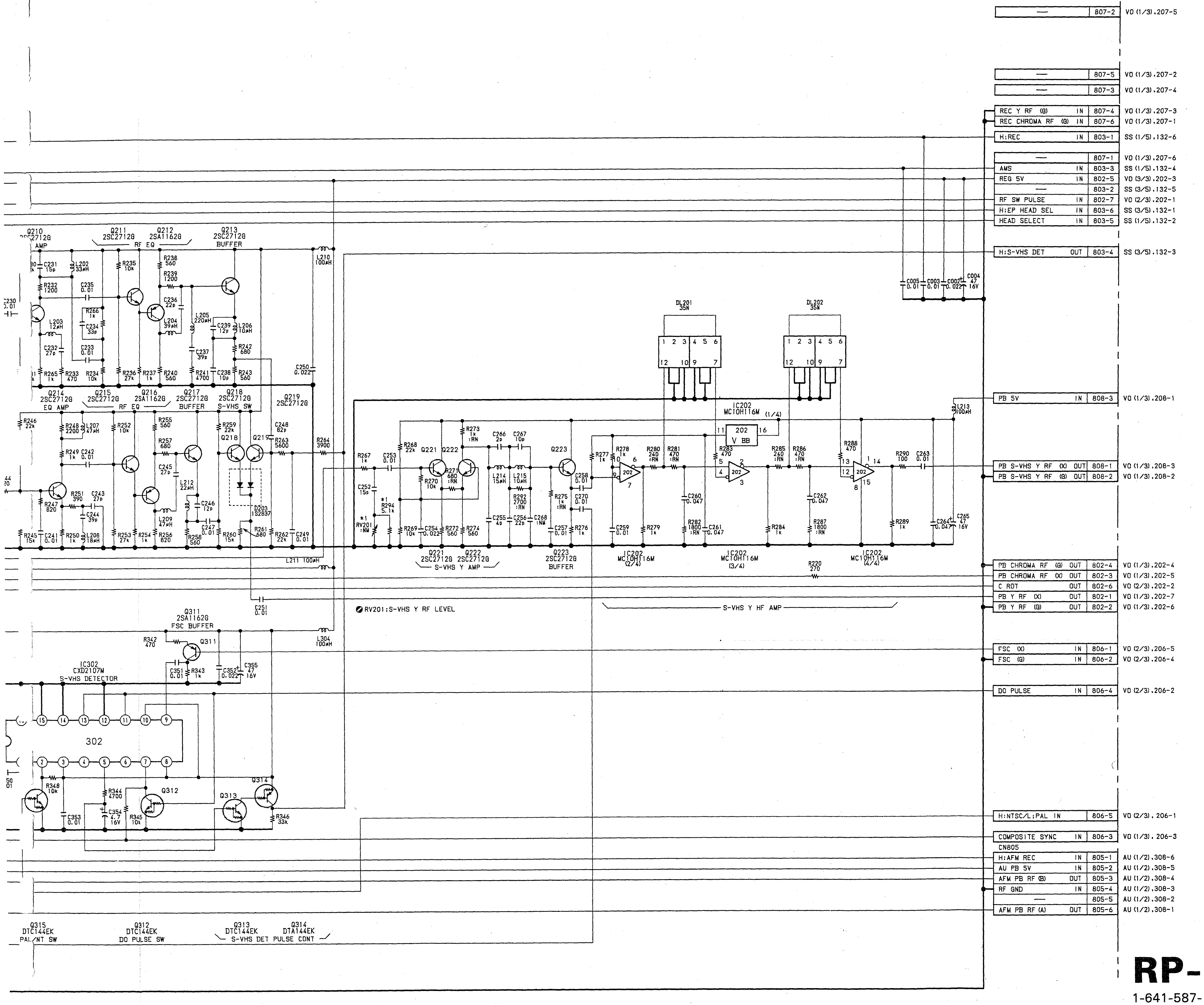


Measurement Condition

PB mode (S): KRV-45HPS
PB mode (N): KRV-45PS

MARK	CHANGED INFORMATION	SERIAL No.
*1	R222 DELETED	10681-
	R294 ADDED	
	RV201 DELETED	


H1002
DZH-40A-R
DRUM ASS'Y
VIDEO HEAD
EP CH-2
SP CH-1
EP CH-1
SP CH-2
FE HEAD
FM AUDIO HEAD
AFM CH-1
AFM CH-2
CN801
801-1 EP CH-2
801-2 EP CH-2
801-3 SP CH-1
801-4 SP CH-1
801-5 EP CH-1
801-6 EP CH-1
801-7 SP CH-2
801-8 SP CH-2
801-9 GND
801-10 FE
801-11 AUDIO CH-1
801-12 AUDIO REC
801-13 AUDIO CH-2
CN804 CHECK PIN
FOR CHECK
804-1 AFM REC CURRENT
804-2 VIDEO PB S-VHS RF
804-3 —
804-4 VIDEO PB RF
804-5 SW PULSE
804-6 GND
①
②
③
IC201
HA118019NT
VIDEO HEAD AMP
201
MAIN Vcc
A/M/S
SYNC
SW30
C ROT
EP/SP
GND
MODE CONTROL LOGIC
COMP
SP CH-2
SP CH-1
EP CH-1
EP CH-2
BUFF
MUTE
DET
PRE AMP Vcc
*1
R222
IC301
HA12115MP
AFM HEAD AMP
301
AGC DET
REC AMP
PB:ON
REC:ON
Vcc (REC)
Vcc (PB)
PRE Vcc
CH1
CH2
L200 100μH
Q220
2SC2712G
BUFFER
Q210
2SC2712G
EQ AMP
Q211
2SC2712G
Q212
2SA1162G
RF EQ
Q214
2SC2712G
EQ AMP
Q215
2SC2712G
Q216
2SA1162G
RF EQ
Q217
2SC2712G
BUFFER
Q311
2SA1162G
FSC BUFFER
IC302
CXD2107M
S-VHS DETECTOR
302
Q310
2SC2712G
Y AMP
Q315
DTC144EK
PAL/NT SW
Q312
DTC144EK
DO PULSE SW


Q210 2SC2712G AMP
Q211 2SC2712G
Q212 2SA1162G
RF EQ
Q213 2SC2712G BUFFER
L210 100μH
Q214 2SC2712G EQ AMP
Q215 2SC2712G
Q216 2SA1162G
RF EQ
Q217 2SC2712G BUFFER
Q218 2SC2712G S-VHS SW
Q219 2SC2712G
D203 1S2837
L211 100μH
C251 0.01
Q221 2SC2712G
Q222 2SC2712G
S-VHS Y AMP
Q223 2SC2712G BUFFER
RV201 S-VHS Y RF LEVEL
DL201 35N
DL202 35N
IC202 MC10H116M (1/4)
IC202 MC10H116M (2/4)
IC202 MC10H116M (3/4)
IC202 MC10H116M (4/4)
202 V BB
R220 270
S-VHS Y HF AMP
L213 100μH
C004 47 16V
C265 47 16V
Q311 2SA1162G FSC BUFFER
IC302 CXD2107M S-VHS DETECTOR
302
L304 100μH
Q312
Q313
Q314
Q315 DTC144EK PAL/NT SW
Q312 DTC144EK DO PULSE SW
Q313 DTC144EK
Q314 DTA144EK
S-VHS DET PULSE CONT
— 807-2 VO (1/3),207-5
— 807-5 VO (1/3),207-2
— 807-3 VO (1/3),207-4
REC Y RF (G) IN 807-4 VO (1/3),207-3
REC CHROMA RF (G) IN 807-6 VO (1/3),207-1
H;REC IN 803-1 SS (1/5),132-6
— 807-1 VO (1/3),207-6
AMS IN 803-3 SS (1/5),132-4
REG 5V IN 802-5 VO (3/3),202-3
— 803-2 SS (3/5),132-5
RF SW PULSE IN 802-7 VO (2/3),202-1
H;EP HEAD SEL IN 803-6 SS (3/5),132-1
HEAD SELECT IN 803-5 SS (1/5),132-2
H;S-VHS DET OUT 803-4 SS (3/5),132-3
PB 5V IN 808-3 VO (1/3),208-1
PB S-VHS Y RF (X) OUT 808-1 VO (1/3),208-3
PB S-VHS Y RF (G) OUT 808-2 VO (1/3),208-2
PB CHROMA RF (G) OUT 802-4 VO (1/3),202-4
PB CHROMA RF (X) OUT 802-3 VO (1/3),202-5
C ROT OUT 802-6 VO (2/3),202-2
PB Y RF (X) OUT 802-1 VO (1/3),202-7
PB Y RF (G) OUT 802-2 VO (1/3),202-6
FSC (X) IN 806-1 VO (2/3),206-5
FSC (G) IN 806-2 VO (2/3),206-4
DO PULSE IN 806-4 VO (2/3),206-2
H:NTSC/L;PAL IN 806-5 VO (2/3), 206-1
COMPOSITE SYNC IN 806-3 VO (1/3), 206-3
CN805
H:AFM REC IN 805-1 AU (1/2),308-6
AU PB 5V IN 805-2 AU (1/2),308-5
AFM PB RF (B) OUT 805-3 AU (1/2),308-4
RF GND IN 805-4 AU (1/2),308-3
— 805-5 AU (1/2),308-2
AFM PB RF (A) OUT 805-6 AU (1/2),308-1

1
2
3
4
5

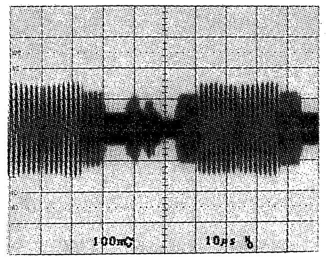
RP-62E

1-641-587-12, 13 (1)
SVP-9020

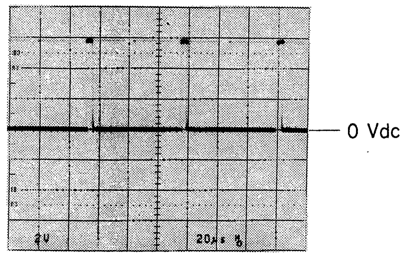
I J K L M N O P

CR-42 (1/3); CHROMA PROCESS & CHROMA OUTPUT

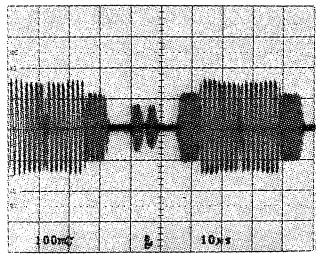
① TP607 (F-3*) PB mode



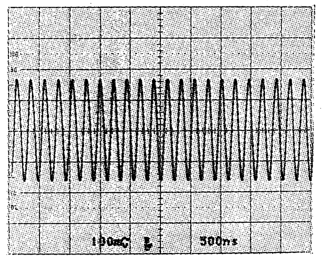
⑥ IC604 pin 4 (F-1)



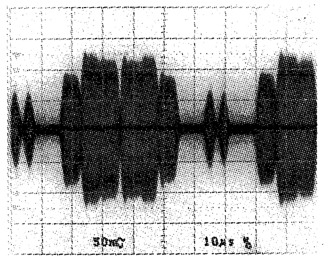
② TP601 (G-3*) PB mode



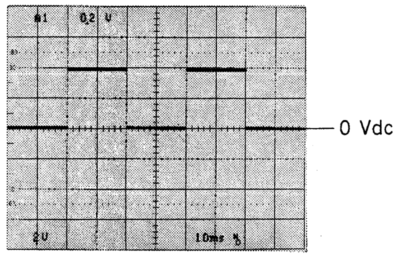
⑦ TP602 (H-2*)



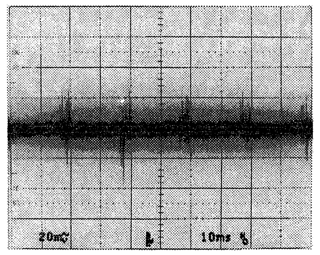
③ TP605 (H-2*) PB mode



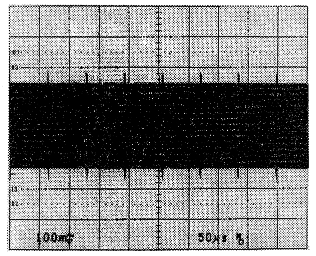
⑧ TP610 (E-3*) PB mode



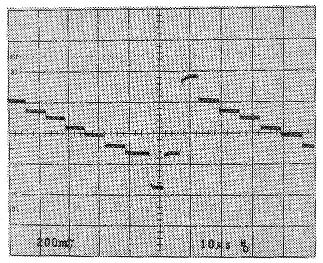
④ TP606 (F-1*) PB mode



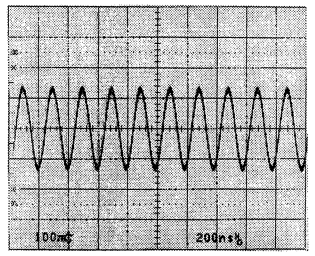
⑨ TP608 (F-3*)

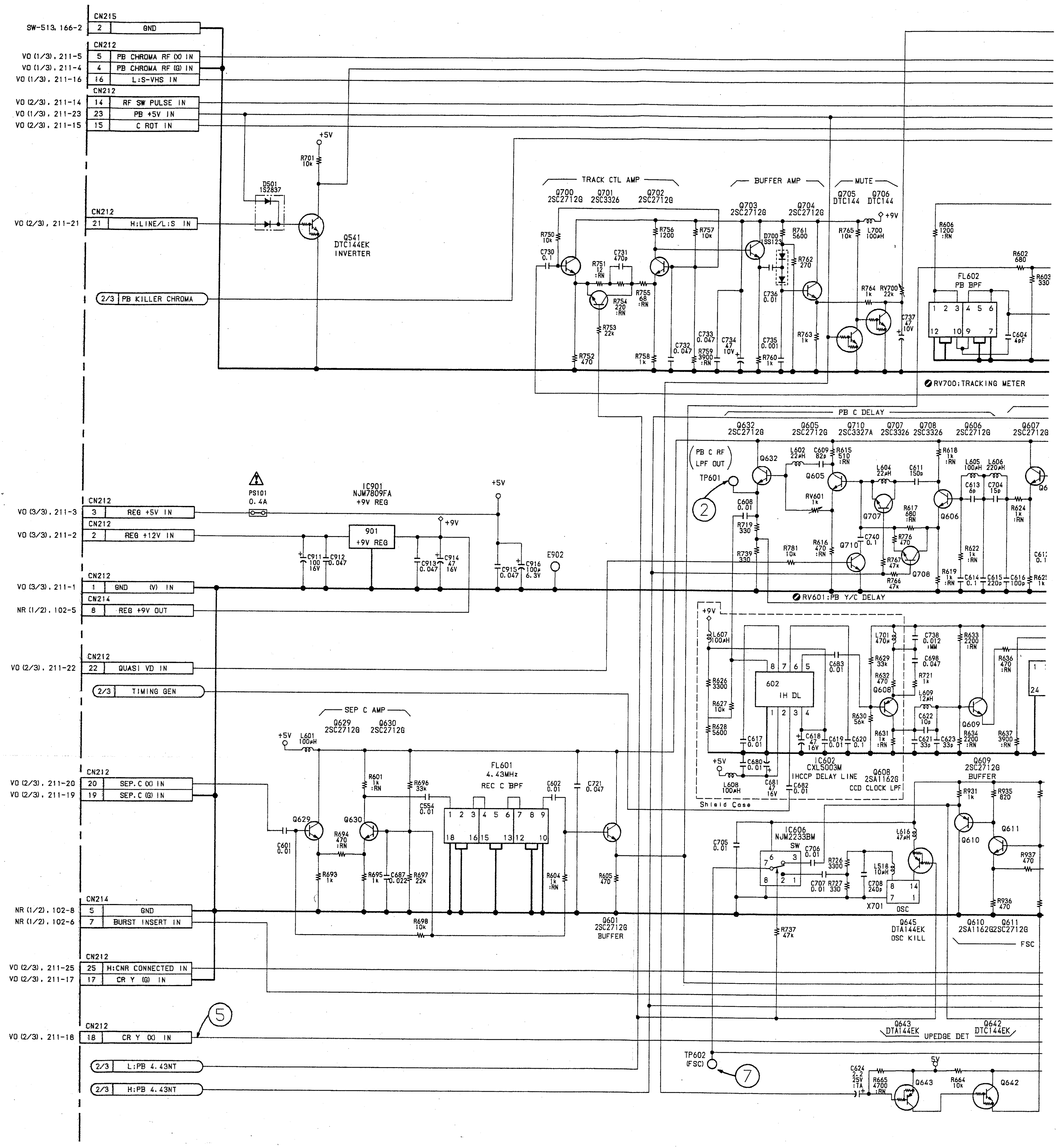


⑤ CN212 pin 18 (H-2) PB mode



TP608 (F-3*) (fsc part)

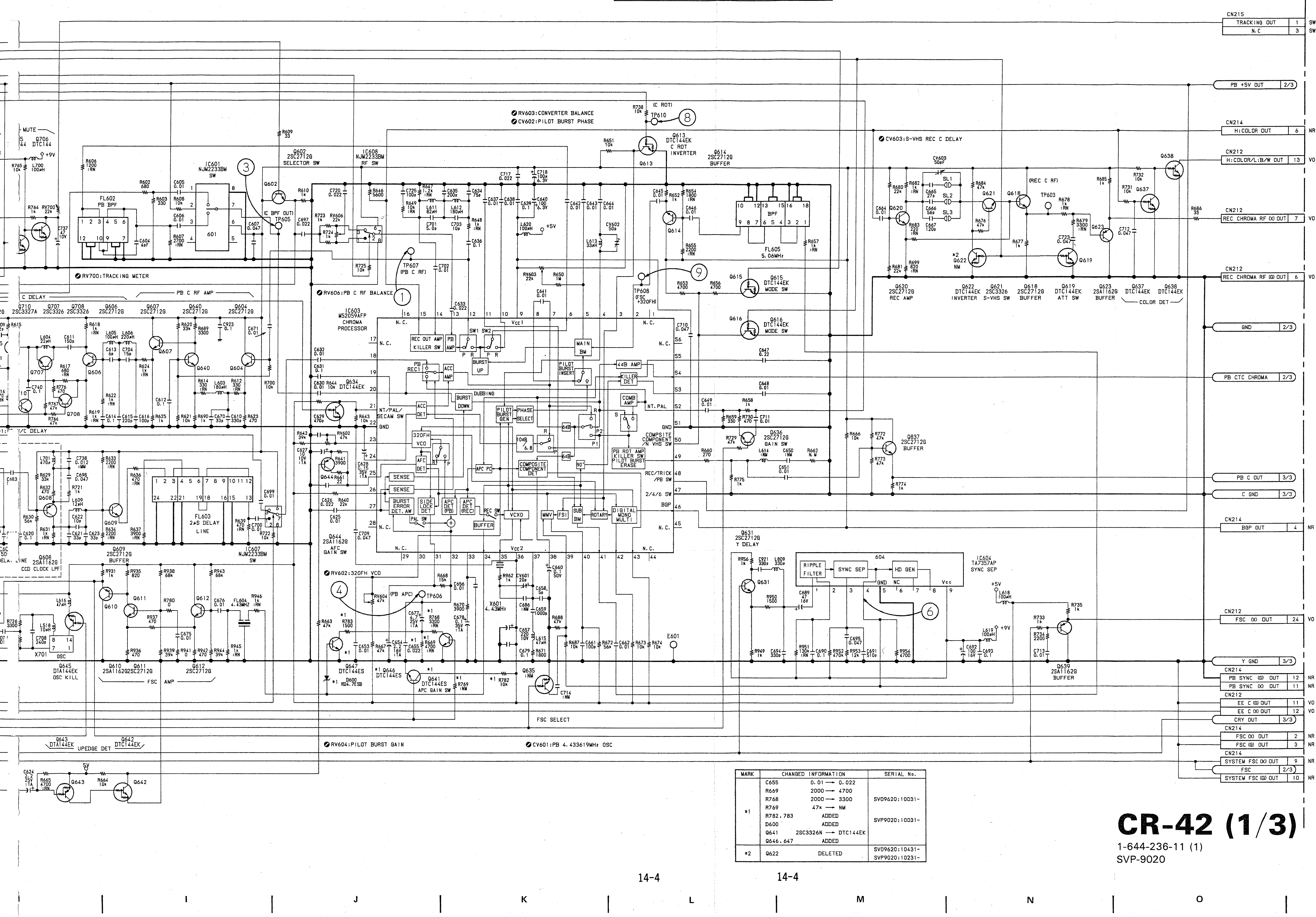



CN215
SW-513, 166-2
GND
CN212
VO (1/3), 211-5
PB CHROMA RF (X) IN
VO (1/3), 211-4
PB CHROMA RF (G) IN
VO (1/3), 211-16
L:S-VHS IN
VO (2/3), 211-14
RF SW PULSE IN
VO (1/3), 211-23
PB +5V IN
VO (2/3), 211-15
C ROT IN
VO (2/3), 211-21
H:LINE/L:S IN
2/3 PB KILLER CHROMA
D501 1SS237
Q541 DTC144EK INVERTER
R701 10k
+5V
TRACK CTL AMP
Q700 2SC2712G
Q701 2SC3326
Q702 2SC2712G
BUFFER AMP
Q703 2SC2712G
Q704 2SC2712G
MUTE
Q705 DTC144
Q706 DTC144
FL602 PB BPF
RV700:TRACKING METER
PB C DELAY
Q632 2SC2712G
Q605 2SC2712G
Q710 2SC3327A
Q707 2SC3326
Q708 2SC3326
Q606 2SC2712G
Q607 2SC2712G
PB C RF LPF OUT
TP601
RV601:PB Y/C DELAY
PS101 0.4A
IC901 NJM7809FA +9V REG
901 +9V REG
E902
VO (3/3), 211-3
REG +5V IN
VO (3/3), 211-2
REG +12V IN
VO (3/3), 211-1
GND (V) IN
CN214
NR (1/2), 102-5
REG +9V OUT
VO (2/3), 211-22
QUASI VD IN
2/3 TIMING GEN
602 1H DL
IC602 CXL5003M
1HCCP DELAY LINE
Q608 2SA1162G
CCD CLOCK LPF
Shield Case
SEP C AMP
Q629 2SC2712G
Q630 2SC2712G
VO (2/3), 211-20
SEP. C (X) IN
VO (2/3), 211-19
SEP. C (G) IN
FL601 4.43MHz REC C BPF
Q601 2SC2712G BUFFER
IC606 NJM2233BM SW
X701 OSC
Q645 DTA144EK OSC KILL
Q609 2SC2712G BUFFER
Q610 2SA1162G
Q611 2SC2712G
FSC
NR (1/2), 102-8
GND
NR (1/2), 102-6
BURST INSERT IN
VO (2/3), 211-25
H:CNR CONNECTED IN
VO (2/3), 211-17
CR Y (G) IN
VO (2/3), 211-18
CR Y (X) IN
2/3 L:PB 4.43NT
2/3 H:PB 4.43NT
TP602 (FSC)
Q643 DTA144EK
Q642 DTC144EK
UPEDGE DET

Measurement Condition
PB mode: KRV-45HPS

* mark; B SIDE mount

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.


CN215
TRACKING OUT
N.C
SW513, 166-3
SW513, 166-1
PB +5V OUT 2/3
CN214
H:COLOR OUT
NR (1/2),102-7
CN212
H:COLOR/L:B/W OUT
VO (2/3),211-13
REC CHROMA RF (X) OUT
VO (1/3),211-7
REC CHROMA RF (G) OUT
VO (1/3),211-6
GND 2/3
PB CTC CHROMA 2/3
PB C OUT 3/3
C GND 3/3
BGP OUT
NR (1/2),102-9
FSC (X) OUT
VO (2/3),211-24
Y GND 3/3
PB SYNC (G) OUT
PB SYNC (X) OUT
EE C (G) OUT
EE C (X) OUT
CRY OUT 3/3
FSC (X) OUT
FSC (G) OUT
SYSTEM FSC (X) OUT
FSC 2/3
SYSTEM FSC (G) OUT
RV603:CONVERTER BALANCE
CV602:PILOT BURST PHASE
CV603:S-VHS REC C DELAY
RV700:TRACKING METER
RV606:PB C RF BALANCE
RV602:320FH VCO
RV604:PILOT BURST GAIN
CV601:PB 4.433619MHz OSC
IC601 NJM2233BM SW
IC608 NJM2233BM RF SW
IC603 M52059AFP CHROMA PROCESSOR
IC604 TA7357AP SYNC SEP
IC607 NJM2233BM SW
FL602 PB BPF
FL603 2H DELAY LINE
FL605 5.06MHz BPF
Q602 2SC2712G SELECTOR SW
Q613 DTC144EK C ROT INVERTER
Q614 2SC2712G BUFFER
Q615 DTC144EK MODE SW
Q616 DTC144EK MODE SW
Q620 2SC2712G REC AMP
Q622 DTC144EK INVERTER
Q621 2SC3326 S-VHS SW
Q618 2SC2712G BUFFER
Q619 DTC144EK ATT SW
Q623 2SA1162G BUFFER
Q637 DTC144EK
Q638 DTC144EK
COLOR DET
Q636 2SC2712G GAIN SW
Q637 2SC2712G BUFFER
Q631 2SC2712G Y DELAY
Q639 2SA1162G BUFFER
Q644 2SA1162G AFC GAIN SW
Q634 DTC144EK
Q646 DTC144ES
Q641 DTC144ES APC GAIN SW
Q647 DTC144ES
D600 RD4.7ESB
Q635 :NM
FSC SELECT
Q706 DTC144
MUTE
C DELAY
PB C RF AMP
Q710 2SC3327A
Q707 2SC3326
Q708 2SC3326
Q606 2SC2712G
Q607 2SC2712G
Q640 2SC2712G
Q604 2SC2712G
Y/C DELAY
Q608 2SA1162G
CCD CLOCK LPF
Q609 2SC2712G BUFFER
Q610 2SA1162G
Q611 2SC2712G
Q612 2SC2712G
FSC AMP
Q645 DTA144EK OSC KILL
X701 OSC
Q643 DTA144EK
Q642 DTC144EK
UPEDGE DET
X601 4.43MHz
TP605 (C BPF OUT)
TP607 (PB C RF)
TP606 (PB APC)
TP608 (FSC +320FH)
TP610 (C ROT)
TP603 (REC C RF)
E601
RIPPLE FILTER
SYNC SEP
HD GEN
REC OUT AMP KILLER SW
PB AMP
BURST UP
ACC AMP
MAIN BM
PILOT BURST INSERT
4dB AMP
KILLER DET
COMB AMP
NT.PAL
DUBBING
BURST DOWN
PILOT BURST GEN
PHASE SELECT
NT/PAL/SECAM SW
320FH VCO
AFC DET
APC PC
COMPOSITE COMPONENT DET
PB ROT AMP KILLER SW PILOT BURST ERASE
COMPOSITE COMPONENT /N VHS SW
REC/TRICK /PB SW
2/4/6 SW
BGP
SENSE
BURST ERROR DET. AW
SIDE LOCK DET
APC DET (PB)
APC DET (REC)
REC SW
VCXO
BUFFER
MMV
FSI
SUB BM
ROTARY
DIGITAL MONO MULTI
PAL SW
Vcc1
Vcc2
GND
N.C.
I
J
K
L
M
N
O
P

MARK	CHANGED INFORMATION		SERIAL No.
*1	C655	0.01 → 0.022	SV09620:10031- SVP9020:10031-
	R669	2000 → 4700	
	R768	2000 → 3300	
	R769	47k → NM	
	R782, 783	ADDED	
	D600	ADDED	
	Q641	2SC3326N → DTC144EK	
	Q646, 647	ADDED	
*2	Q622	DELETED	SV09620:10431- SVP9020:10231-

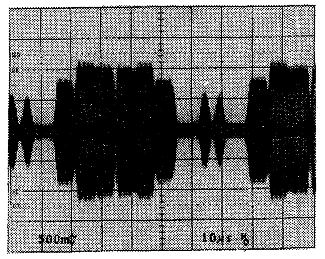
CR-42 (1/3)

1-644-236-11 (1)

SVP-9020

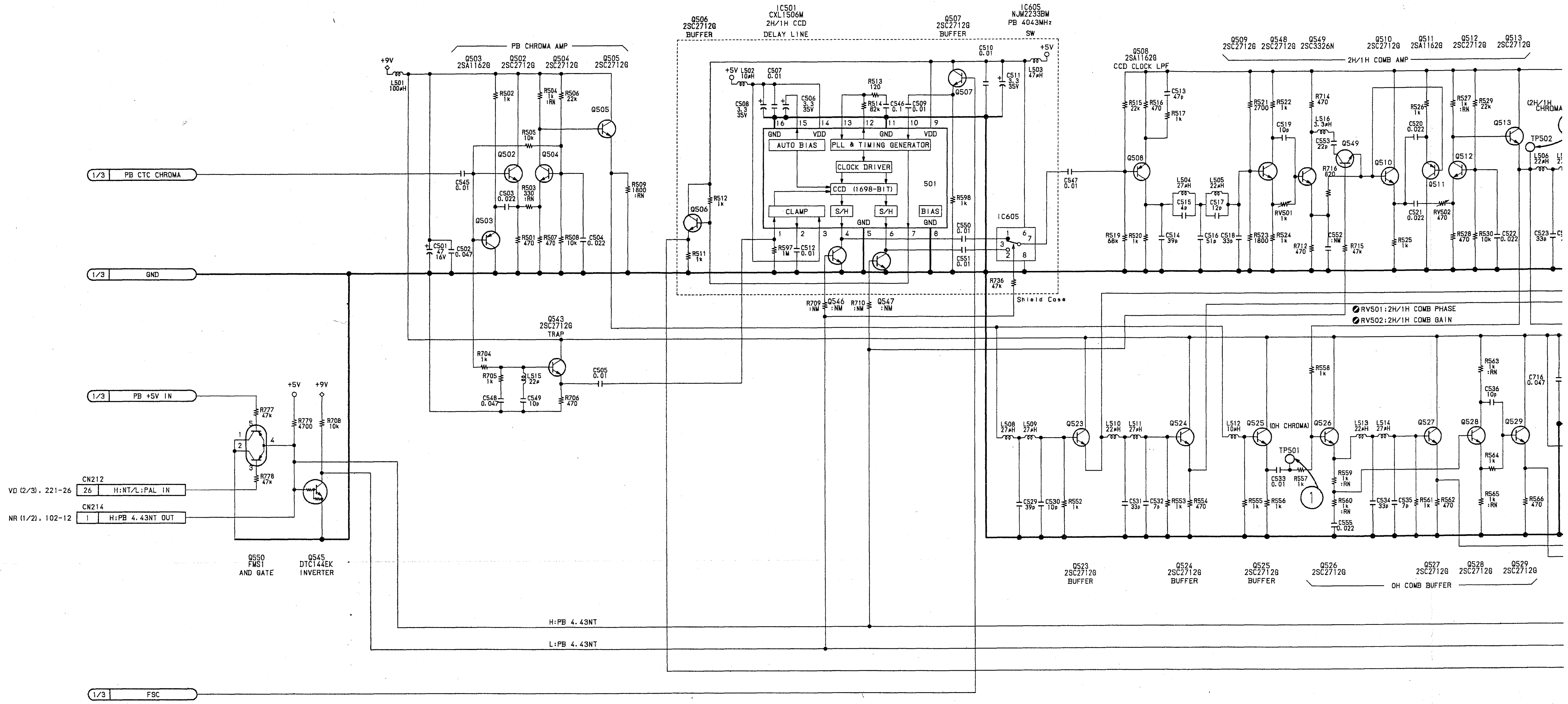
CR-42 (2/3); PB CROSSTALK CANCELLER

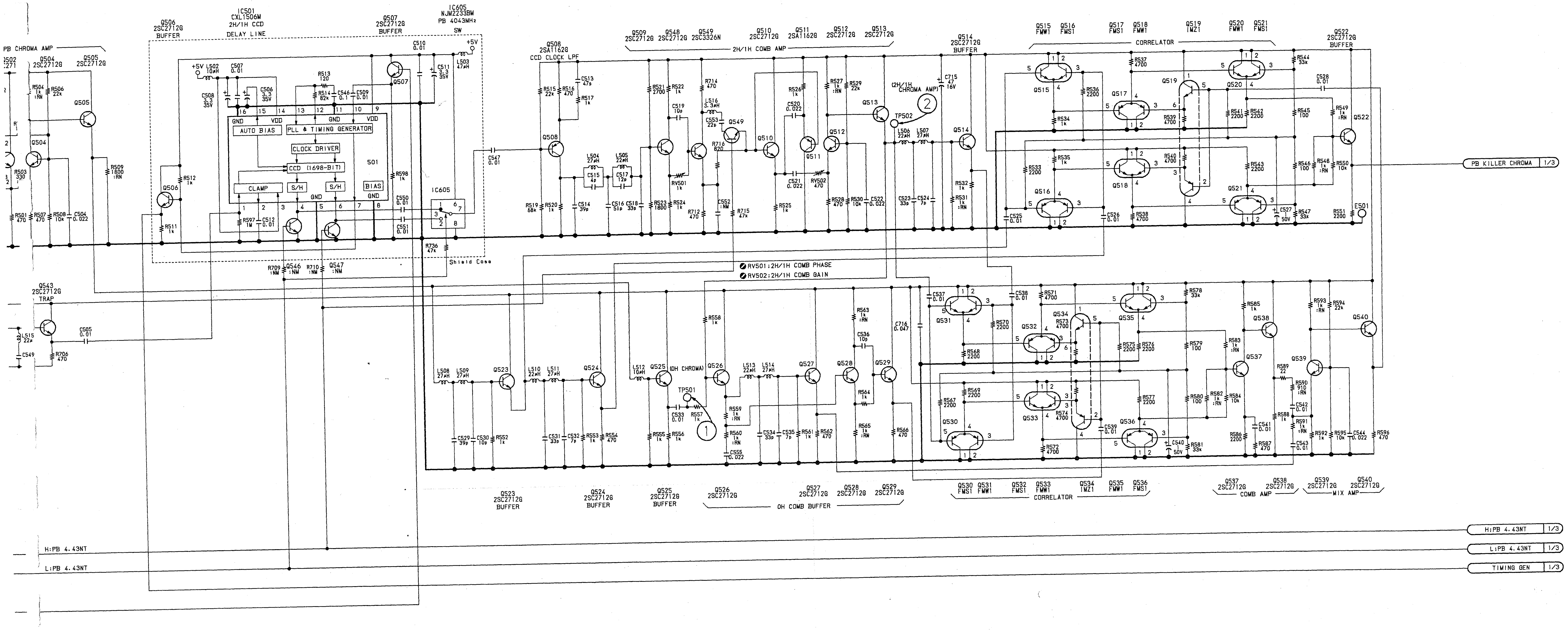
① TP501 (C-3∗) PB mode
② TP502 (A-4∗) PB mode



Measurement Condition
PB mode: KRV-45HPS

∗ mark; B SIDE mount


1/3 PB CTC CHROMA
1/3 GND
1/3 PB +5V IN
1/3 FSC
VD (2/3), 221-26
NR (1/2), 102-12
CN212
26 H:NT/L:PAL IN
CN214
1 H:PB 4.43NT OUT
Q550 FMS1 AND GATE
Q545 DTC144EK INVERTER
+5V
+9V
PB CHROMA AMP
Q503 2SA1162G
Q502 2SC2712G
Q504 2SC2712G
Q505 2SC2712G
Q543 2SC2712G TRAP
Q506 2SC2712G BUFFER
IC501 CXL1506M 2H/1H CCD DELAY LINE
Q507 2SC2712G BUFFER
IC605 NJM2233BM PB 4043MHz SW
GND
VDD
AUTO BIAS
PLL & TIMING GENERATOR
CLOCK DRIVER
CCD (1698-BIT)
501
CLAMP
S/H
S/H
BIAS
Shield Case
Q546 :NM
Q547 :NM
Q508 2SA1162G CCD CLOCK LPF
Q509 2SC2712G
Q548 2SC2712G
Q549 2SC3326N
Q510 2SC2712G
Q511 2SA1162G
Q512 2SC2712G
Q513 2SC2712G
2H/1H COMB AMP
(2H/1H CHROMA
TP502
RV501:2H/1H COMB PHASE
RV502:2H/1H COMB GAIN
TP501
(OH CHROMA)
Q523 2SC2712G BUFFER
Q524 2SC2712G BUFFER
Q525 2SC2712G BUFFER
Q526 2SC2712G
Q527 2SC2712G
Q528 2SC2712G
Q529 2SC2712G
OH COMB BUFFER
H:PB 4.43NT
L:PB 4.43NT
①
②

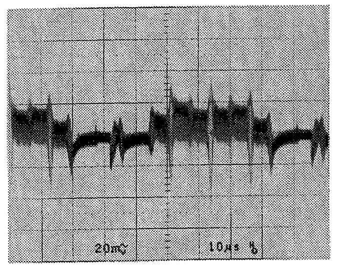

PB CHROMA AMP
Q504 2SC2712G
Q505 2SC2712G
Q506 2SC2712G BUFFER
IC501 CXL1506M 2H/1H CCD DELAY LINE
Q507 2SC2712G BUFFER
IC605 NJM2233BM PB 4043MHz SW
AUTO BIAS
PLL & TIMING GENERATOR
CLOCK DRIVER
CCD (1698-BIT)
CLAMP
S/H
BIAS
Shield Case
Q508 2SA1162G CCD CLOCK LPF
Q509 2SC2712G
Q548 2SC2712G
Q549 2SC3326N
Q510 2SC2712G
Q511 2SA1162G
Q512 2SC2712G
Q513 2SC2712G
2H/1H COMB AMP
Q514 2SC2712G BUFFER
(2H/1H CHROMA AMP)
TP502
Q515 FMW1
Q516 FMS1
Q517 FMS1
Q518 FMW1
Q519 IMZ1
Q520 FMW1
Q521 FMS1
CORRELATOR
Q522 2SC2712G BUFFER
PB KILLER CHROMA 1/3
RV501:2H/1H COMB PHASE
RV502:2H/1H COMB GAIN
Q543 2SC2712G TRAP
Q523 2SC2712G BUFFER
Q524 2SC2712G BUFFER
Q525 2SC2712G BUFFER
(OH CHROMA)
TP501
Q526 2SC2712G
Q527 2SC2712G
Q528 2SC2712G
Q529 2SC2712G
OH COMB BUFFER
Q530 FMS1
Q531 FMW1
Q532 FMS1
Q533 FMW1
Q534 IMZ1
Q535 FMW1
Q536 FMS1
CORRELATOR
Q537 2SC2712G
Q538 2SC2712G
COMB AMP
Q539 2SC2712G
Q540 2SC2712G
MIX AMP
H:PB 4.43NT 1/3
L:PB 4.43NT 1/3
TIMING GEN 1/3
H:PB 4.43NT
L:PB 4.43NT

CR-42 (2/3)

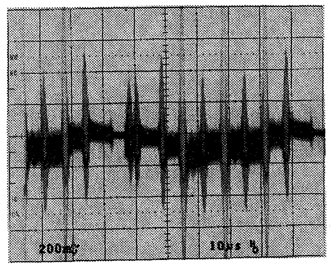
1-644-236-11 (1)
SVP-9020

CR-42 (3/3); PB CHROMA OUTPUT

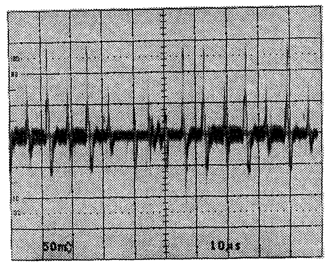
① TP801 (D-1＊) PB mode



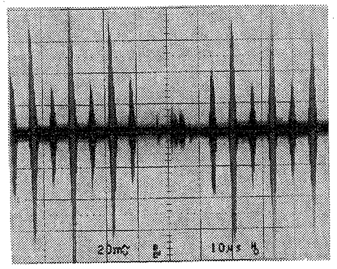
② TP820 (A-1＊) PB mode



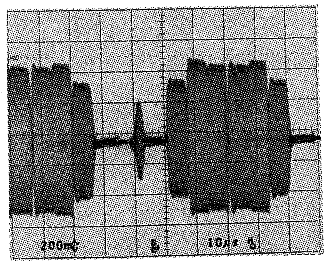
③ TP850 (C-1＊) PB mode

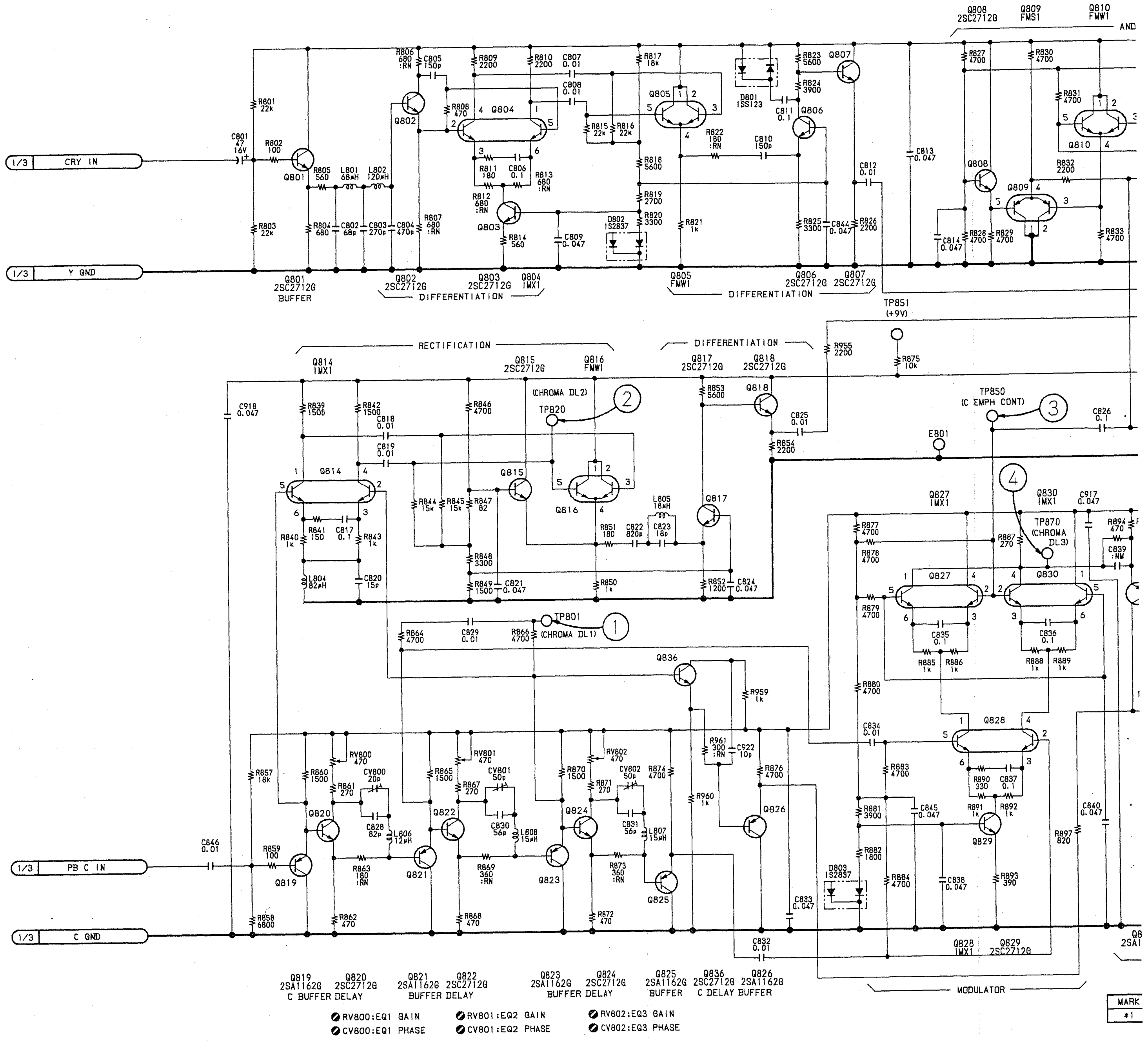


④ TP870 (C-1＊) PB mode



⑤ TP890 (E-1＊) PB mode

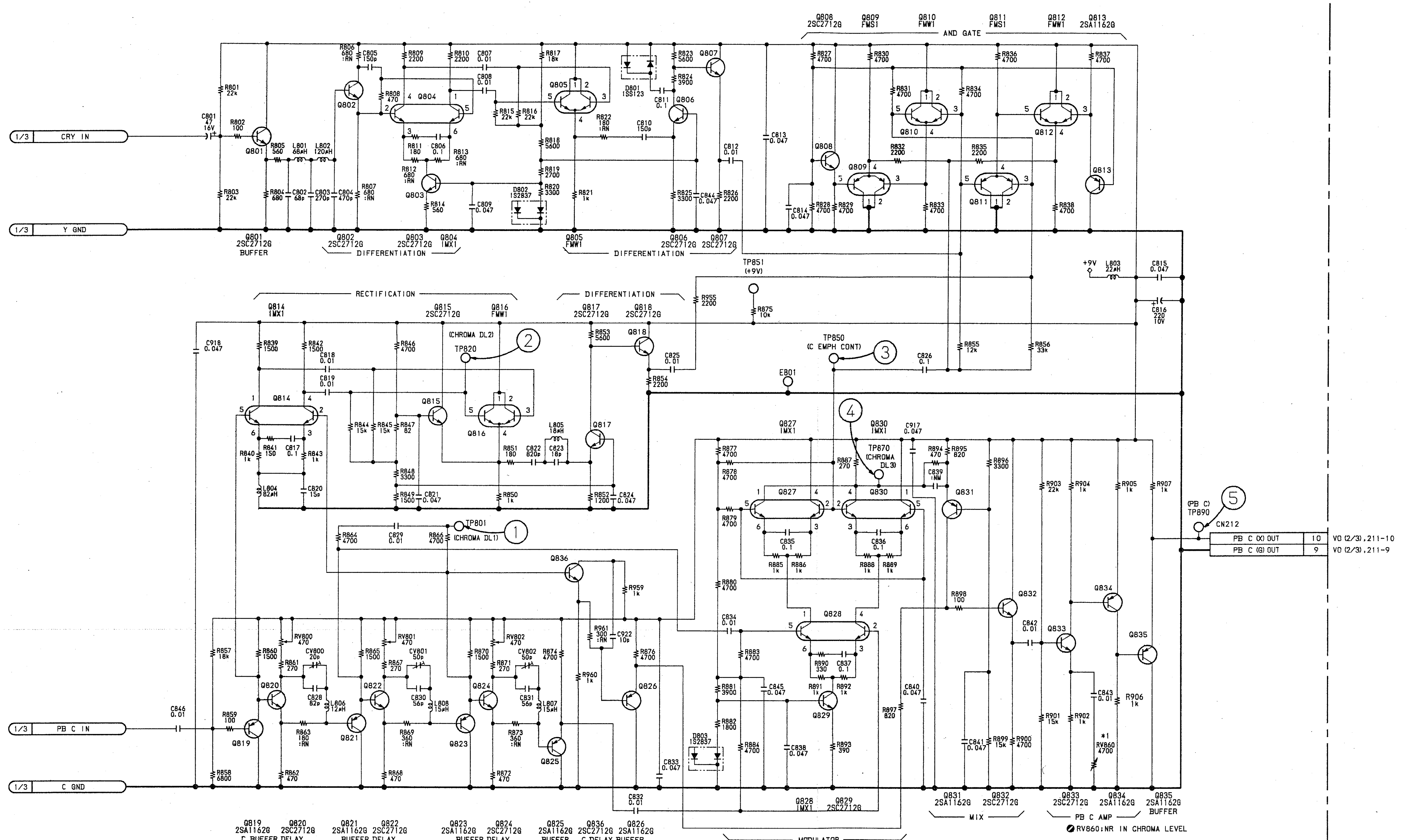



1/3 CRY IN
1/3 Y GND
1/3 PB C IN
1/3 C GND
Q801 2SC2712G BUFFER
Q802 2SC2712G
Q803 2SC2712G
Q804 IMX1
DIFFERENTIATION
Q805 FMW1
Q806 2SC2712G
Q807 2SC2712G
DIFFERENTIATION
Q808 2SC2712G
Q809 FMS1
Q810 FMW1
TP851 (+9V)
RECTIFICATION
Q814 IMX1
Q815 2SC2712G
Q816 FMW1
DIFFERENTIATION
Q817 2SC2712G
Q818 2SC2712G
(CHROMA DL2)
TP820
②
TP850 (C EMPH CONT)
③
④
TP870 (CHROMA DL3)
Q827 IMX1
Q830 IMX1
TP801 (CHROMA DL1)
①
Q836
Q828
Q829
Q819 2SA1162G
Q820 2SC2712G
C BUFFER DELAY
Q821 2SA1162G
Q822 2SC2712G
BUFFER DELAY
Q823 2SA1162G
Q824 2SC2712G
BUFFER DELAY
Q825 2SA1162G BUFFER
Q836 2SC2712G C DELAY
Q826 2SA1162G BUFFER
Q828 IMX1
Q829 2SC2712G
MODULATOR
RV800:EQ1 GAIN
CV800:EQ1 PHASE
RV801:EQ2 GAIN
CV801:EQ2 PHASE
RV802:EQ3 GAIN
CV802:EQ3 PHASE
MARK
＊1

Measurement Condition

PB mode: KRV-45HPS

＊ mark; B SIDE mount

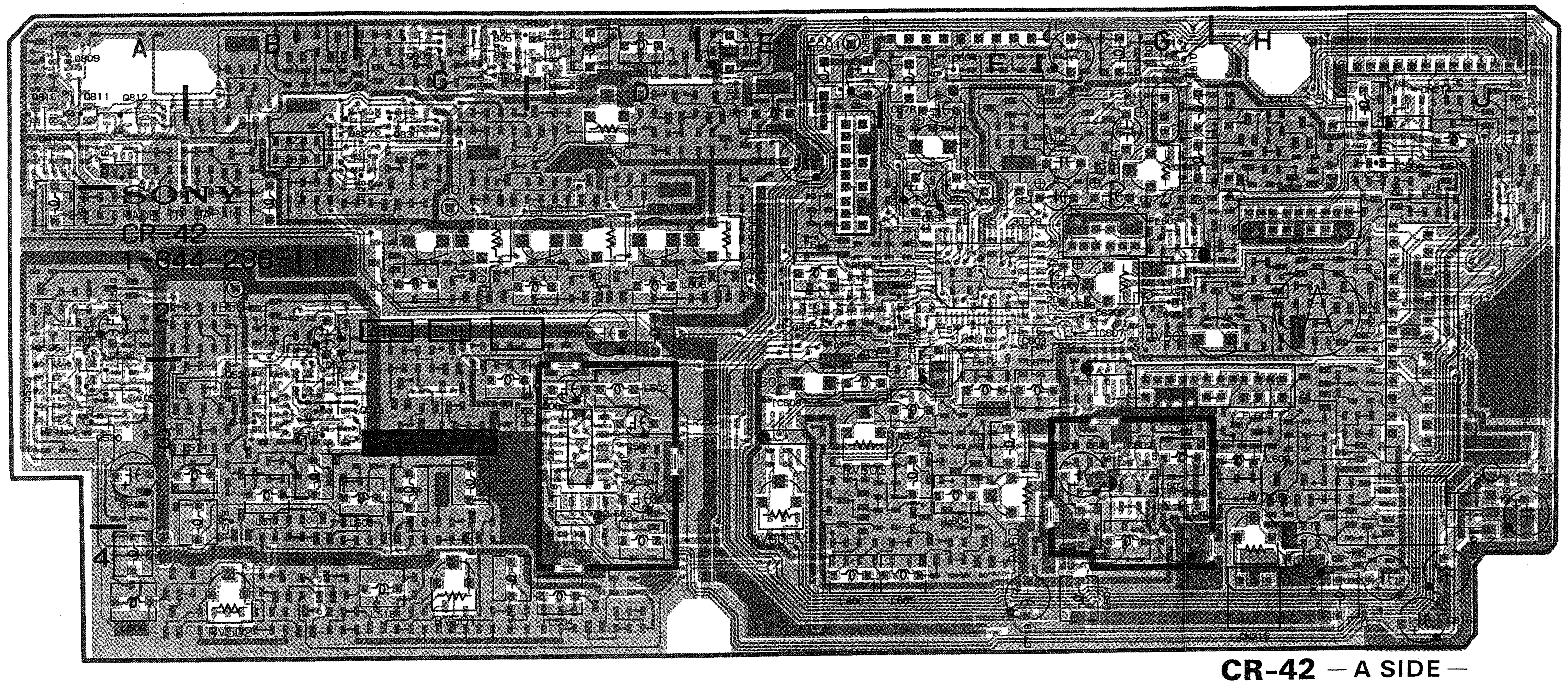

1/3 CRY IN
1/3 Y GND
1/3 PB C IN
1/3 C GND
Q801 2SC2712G BUFFER
Q802 2SC2712G
Q803 2SC2712G
Q804 IMX1
DIFFERENTIATION
Q805 FMW1
Q806 2SC2712G
Q807 2SC2712G
DIFFERENTIATION
Q808 2SC2712G
Q809 FMS1
Q810 FMW1
Q811 FMS1
Q812 FMW1
Q813 2SA1162G
AND GATE
TP851 (+9V)
+9V
RECTIFICATION
Q814 IMX1
Q815 2SC2712G
Q816 FMW1
DIFFERENTIATION
Q817 2SC2712G
Q818 2SC2712G
(CHROMA DL2) TP820
②
TP850 (C EMPH CONT)
③
E801
④
TP870 (CHROMA DL3)
Q827 IMX1
Q830 IMX1
TP801 (CHROMA DL1)
①
(PB C) TP890
⑤
CN212
PB C (X) OUT
10
VO (2/3),211-10
PB C (G) OUT
9
VO (2/3),211-9
Q819 2SA1162G
Q820 2SC2712G
C BUFFER DELAY
Q821 2SA1162G
Q822 2SC2712G
BUFFER DELAY
Q823 2SA1162G
Q824 2SC2712G
BUFFER DELAY
Q825 2SA1162G
BUFFER
Q836 2SC2712G
Q826 2SA1162G
C DELAY BUFFER
Q828 IMX1
Q829 2SC2712G
MODULATOR
Q831 2SA1162G
Q832 2SC2712G
MIX
Q833 2SC2712G
Q834 2SA1162G
PB C AMP
Q835 2SA1162G
BUFFER
*1 RV860 4700
RV800:EQ1 GAIN
CV800:EQ1 PHASE
RV801:EQ2 GAIN
CV801:EQ2 PHASE
RV802:EQ3 GAIN
CV802:EQ3 PHASE
RV860:NR IN CHROMA LEVEL

MARK	CHANGED INFORMATION	SERIAL No.
*1	RV860 2200 ——→ 4700	10431-

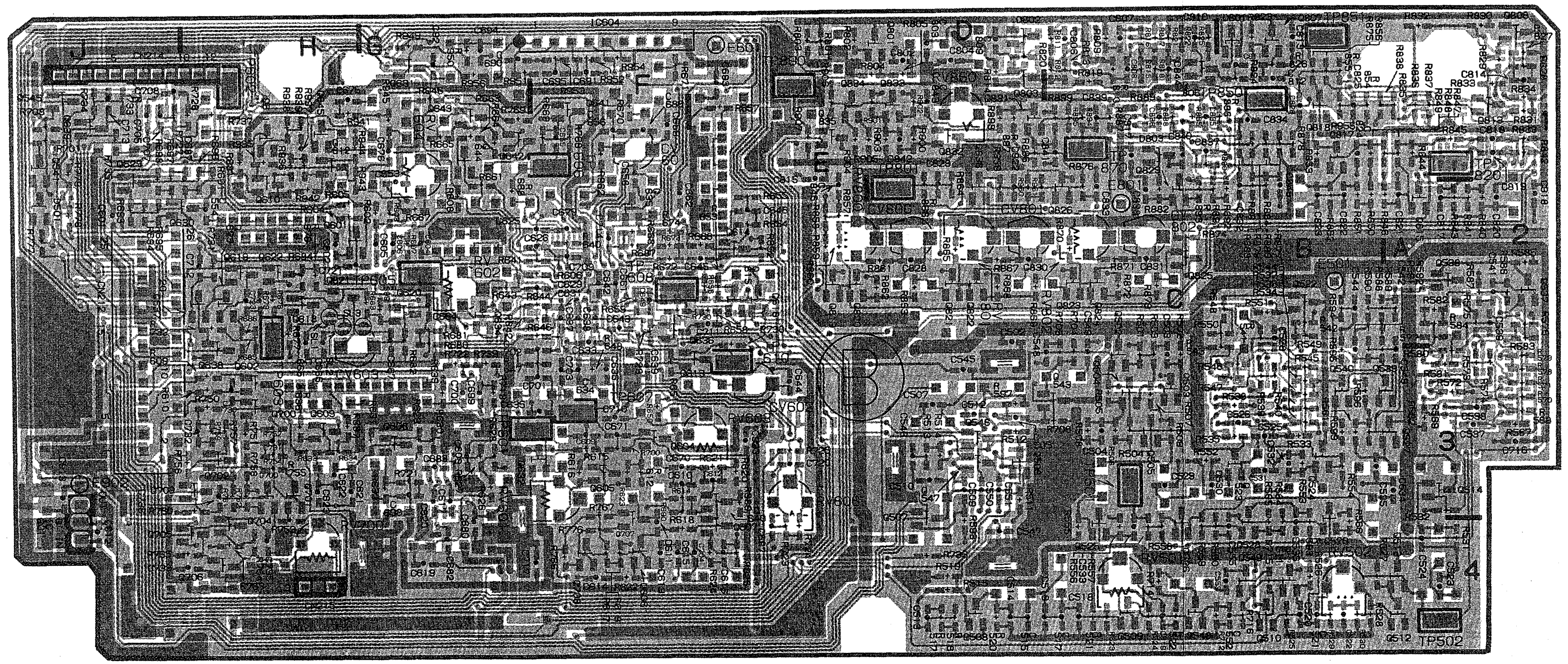
CR-42 (3/3)

1-644-236-11 (1)
SVP-9020

CR-42 ; CHROMA PROCESS



CR-42 — A SIDE —
1-644-236-11 (1)
SVP-9020



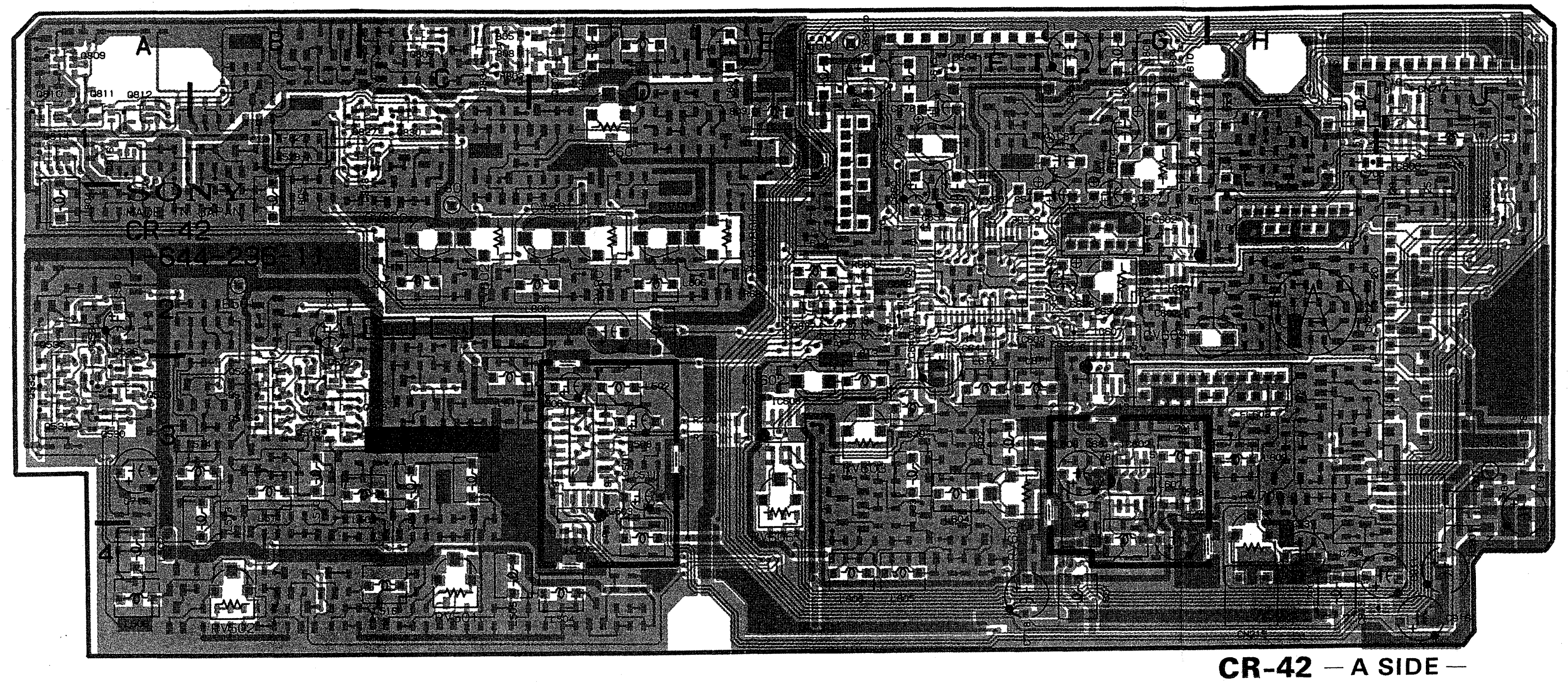
CR-42 — B SIDE —
1-644-236-11 (1)
SVP-9020

CR-42 (1-644-236-11)

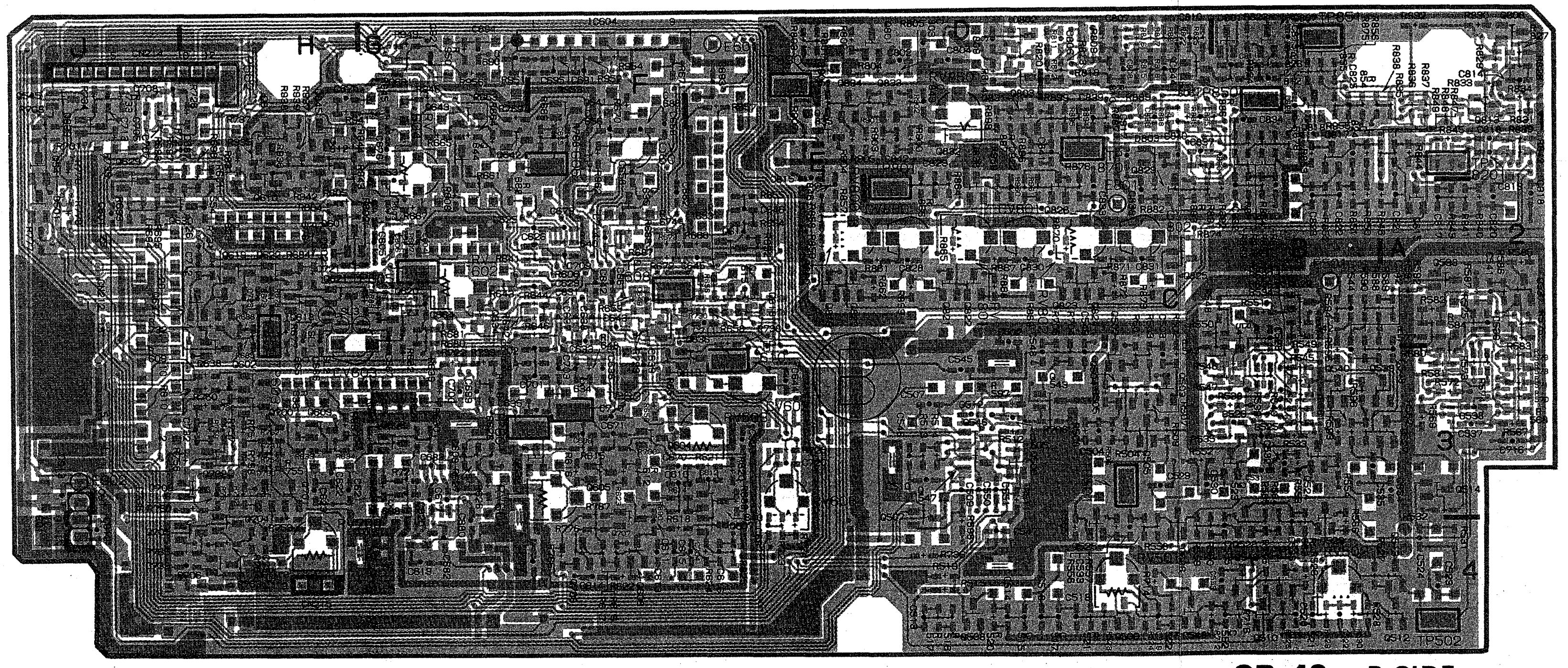
CN212	H-2	Q530	A-3	Q807	B-1 *
CN214	J-1	Q531	A-3	Q808	A-1 *
CN215	H-4	Q532	A-3	Q809	A-1
		Q533	A-3	Q810	A-1
CV601	F-1	Q534	A-2	Q811	A-1
CV602	E-3	Q535	A-2	Q812	A-1
CV603	G-2	Q536	A-2	Q813	A-1 *
CV800	D-2	Q537	A-2 *	Q814	A-1
CV801	D-2	Q538	A-2 *	Q815	A-2 *
CV802	C-2	Q539	B-3 *	Q816	A-1
		Q540	B-3 *	Q817	B-1 *
D501	J-2 *	Q541	J-1 *	Q818	B-1 *
D700	H-3 *	Q543	C-3 *	Q819	E-2 *
D801	B-1 *	Q545	J-1 *	Q820	E-2 *
D802	D-1 *	Q548	C-4 *	Q821	D-2 *
D803	C-1 *	Q549	B-4 *	Q822	D-2 *
		Q550	J-2	Q823	C-2 *
E501	B-2	Q601	H-2 *	Q824	C-2 *
E601	E-1	Q602	H-3 *	Q825	C-2 *
E801	C-2	Q604	F-3 *	Q826	C-2 *
E902	J-3	Q605	F-3 *	Q827	B-1
		Q606	F-4 *	Q828	C-2
FL601	H-2	Q607	E-4 *	Q829	C-1 *
FL602	G-2	Q608	G-3 *	Q830	C-1
FL603	H-3	Q609	H-3 *	Q831	D-1 *
FL604	G-1	Q610	H-2 *	Q832	D-1 *
FL605	F-1	Q611	H-1 *	Q833	D-1 *
		Q612	H-1 *	Q834	E-1 *
IC501	D-3	Q613	F-3 *	Q835	E-1 *
IC601	G-2	Q614	E-2 *	Q836	D-1 *
IC602	G-3	Q615	E-2 *	Q837	E-2
IC603	F-2	Q616	E-2 *		
IC604	F-1	Q618	H-2 *	RV501	C-4
IC605	D-4	Q619	H-2 *	RV502	B-4
IC606	J-1	Q620	G-2 *	RV601	F-4
IC607	G-2	Q621	H-2 *	RV602	G-2
IC608	E-3	Q622	H-2 *	RV603	E-3
IC901	J-4	Q623	H-2 *	RV604	G-1
		Q629	J-1 *	RV606	E-3
PS101	J-3	Q630	J-2 *	RV700	H-3
		Q631	G-1 *	RV800	E-2
Q502	C-2 *	Q632	G-3 *	RV801	D-2
Q503	C-3 *	Q634	G-2 *	RV802	C-2
Q504	C-3 *	Q636	F-2 *	RV860	A-1
Q505	C-3 *	Q637	J-2 *		
Q506	D-3 *	Q638	H-3 *	TP501	C-3 *
Q507	D-3 *	Q639	J-1 *	TP502	A-4 *
Q508	D-4 *	Q640	E-3 *	TP601	G-3 *
Q509	C-4 *	Q641	F-1 *	TP602	H-2 *
Q510	B-4 *	Q642	G-1 *	TP603	H-3 *
Q511	B-4 *	Q643	G-1 *	TP605	H-2 *
Q512	A-4 *	Q644	G-1 *	TP606	F-1 *
Q513	A-4 *	Q645	H-1 *	TP607	F-3 *
Q514	A-3 *	Q700	H-3 *	TP608	F-2 *
Q515	B-3	Q701	H-3 *	TP610	E-3 *
Q516	B-3	Q702	H-2 *	TP801	D-1 *
Q517	B-3	Q703	J-3 *	TP820	A-1 *
Q518	C-3	Q704	H-3 *	TP850	C-1 *
Q519	B-3	Q705	J-4 *	TP851	B-1 *
Q520	B-3	Q706	J-4 *	TP870	C-1 *
Q521	B-3	Q707	F-4 *	TP890	E-1 *
Q522	B-2 *	Q708	F-4 *		
Q523	B-3 *	Q710	F-3 *	X601	F-2
Q524	B-3 *	Q801	D-1 *	X701	H-1
Q525	C-4 *	Q802	D-1		
Q526	C-4 *	Q803	D-1 *		
Q527	A-3 *	Q804	C-1		
Q528	B-4 *	Q805	C-1		
Q529	B-4 *	Q806	C-1 *		

* mark ; B SIDE mount

CR-42; CHROMA PROCESS



CR-42 — A SIDE —
1-644-236-11 (1)
SVP-9020



CR-42 — B SIDE —
1-644-236-11 (1)
SVP-9020

CR-42 (1-644-236-11)

CN212	H-2
CN214	J-1
CN215	H-4
CV601	F-1
CV602	E-3
CV603	G-2
CV800	D-2
CV801	D-2
CV802	C-2
D501	J-2 *
D700	H-3 *
D801	B-1 *
D802	D-1 *
D803	C-1 *
E501	B-2
E601	E-1
E801	C-2
E902	J-3
FL601	H-2
FL602	G-2
FL603	H-3
FL604	G-1
FL605	F-1
IC501	D-3
IC601	G-2
IC602	G-3
IC603	F-2
IC604	F-1
IC605	D-4
IC606	J-1
IC607	G-2
IC608	E-3
IC901	J-4
PS101	J-3
Q502	C-2 *
Q503	C-3 *
Q504	C-3 *
Q505	C-3 *
Q506	D-3 *
Q507	D-3 *
Q508	D-4 *
Q509	C-4 *
Q510	B-4 *
Q511	B-4 *
Q512	A-4 *
Q513	A-4 *
Q514	A-3 *
Q515	B-3
Q516	B-3
Q517	B-3
Q518	C-3
Q519	B-3
Q520	B-3
Q521	B-3
Q522	B-2 *
Q523	B-3 *
Q524	B-3 *
Q525	C-4 *
Q526	C-4 *
Q527	A-3 *
Q528	B-4 *
Q529	B-4 *
Q530	A-3
Q531	A-3
Q532	A-3
Q533	A-3
Q534	A-2
Q535	A-2
Q536	A-2
Q537	A-2 *
Q538	A-2 *
Q539	B-3 *
Q540	B-3 *
Q541	J-1 *
Q543	C-3 *
Q545	J-1 *
Q548	C-4 *
Q549	B-4 *
Q550	J-2
Q601	H-2 *
Q602	H-3 *
Q604	F-3 *
Q605	F-3 *
Q606	F-4 *
Q607	E-4 *
Q608	G-3 *
Q609	H-3 *
Q610	H-2 *
Q611	H-1 *
Q612	H-1 *
Q613	F-3 *
Q614	E-2 *
Q615	E-2 *
Q616	E-2 *
Q618	H-2 *
Q619	H-2 *
Q620	G-2 *
Q621	H-2 *
Q622	H-2 *
Q623	H-2 *
Q629	J-1 *
Q630	J-2 *
Q631	G-1 *
Q632	G-3 *
Q634	G-2 *
Q636	F-2 *
Q637	J-2 *
Q638	H-3 *
Q639	J-1 *
Q640	E-3 *
Q641	F-1 *
Q642	G-1 *
Q643	G-1 *
Q644	G-1 *
Q645	H-1 *
Q700	H-3 *
Q701	H-3 *
Q702	H-2 *
Q703	J-3 *
Q704	H-3 *
Q705	J-4 *
Q706	J-4 *
Q707	F-4 *
Q708	F-4 *
Q710	F-3 *
Q801	D-1 *
Q802	D-1
Q803	D-1 *
Q804	C-1
Q805	C-1
Q806	C-1 *
Q807	B-1 *
Q808	A-1 *
Q809	A-1
Q810	A-1
Q811	A-1
Q812	A-1
Q813	A-1 *
Q814	A-1
Q815	A-2 *
Q816	A-1
Q817	B-1 *
Q818	B-1 *
Q819	E-2 *
Q820	E-2 *
Q821	D-2 *
Q822	D-2 *
Q823	C-2 *
Q824	C-2 *
Q825	C-2 *
Q826	C-2 *
Q827	B-1
Q828	C-2
Q829	C-1 *
Q830	C-1
Q831	D-1 *
Q832	D-1 *
Q833	D-1 *
Q834	E-1 *
Q835	E-1 *
Q836	D-1 *
Q837	E-2
RV501	C-4
RV502	B-4
RV601	F-4
RV602	G-2
RV603	E-3
RV604	G-1
RV606	E-3
RV700	H-3
RV800	E-2
RV801	D-2
RV802	C-2
RV860	A-1
TP501	C-3 *
TP502	A-4 *
TP601	G-3 *
TP602	H-2 *
TP603	H-3 *
TP605	H-2 *
TP606	F-1 *
TP607	F-3 *
TP608	F-2 *
TP610	E-3 *
TP801	D-1 *
TP820	A-1 *
TP850	C-1 *
TP851	B-1 *
TP870	C-1 *
TP890	E-1 *
X601	F-2
X701	H-1

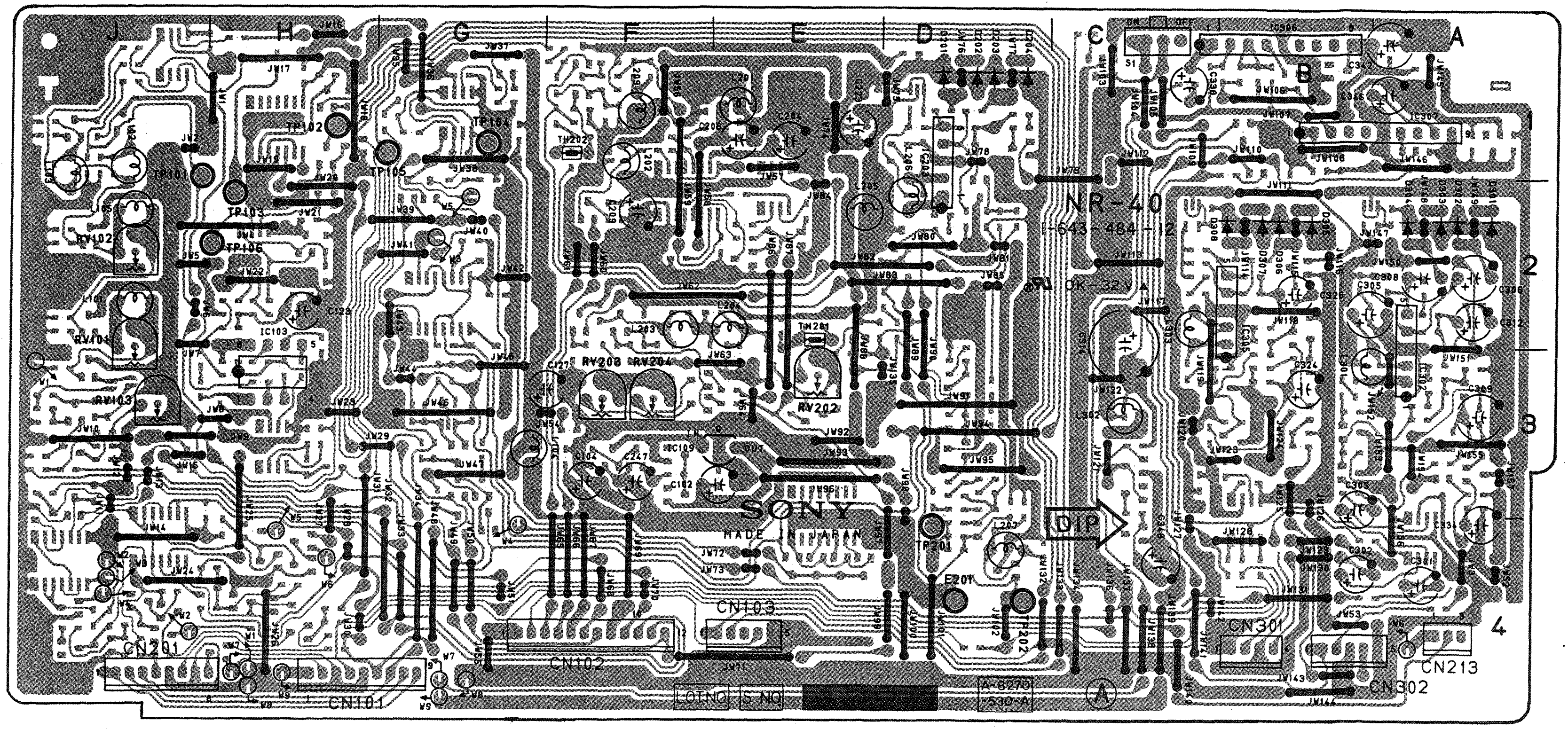
* mark; B SIDE mount

NR-40A ; NOISE REDUCER

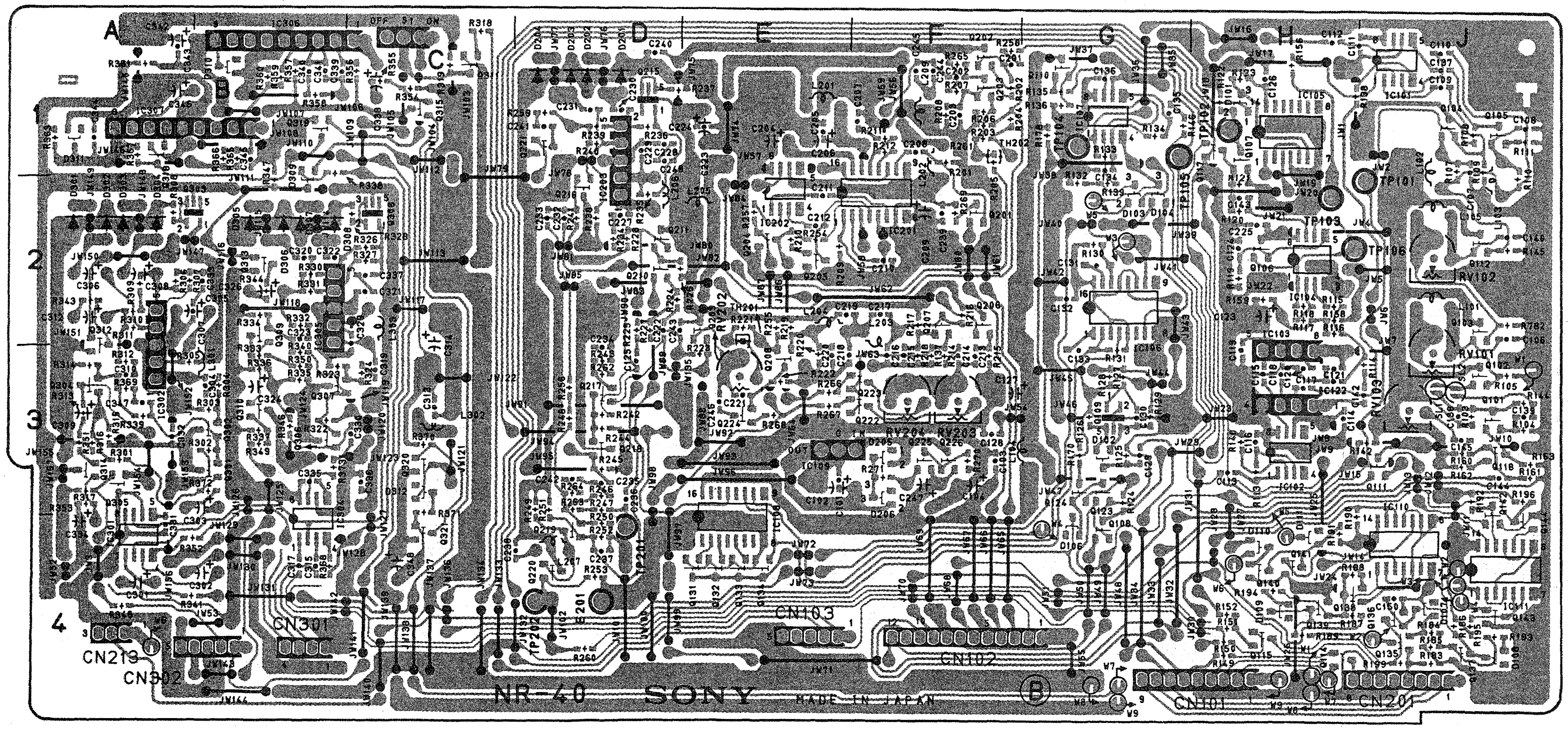
NR-40A (1-643-484-12)

CN101	G-4
CN201	J-4
CN301	C-4
CN302	B-4
D301	B-2
D302	B-2
D303	A-2
D304	A-2
D305	D-2
D306	D-3
D307	C-3
D308	C-2
D309	B-4 *
D310	C-2 *
D311	B-2 *
D312	A-4 *
E201	D-3
IC301	B-4 *
IC302	B-3
IC304	C-4 *
IC305	C-3
IC306	C-1
IC307	B-1
Q114	H-4 *
Q115	H-5 *
Q222	D-1 *
Q223	D-1 *
Q224	D-3 *
Q301	B-3 *
Q302	A-4
Q303	A-2 *
Q304	B-4 *
Q305	B-4 *
Q306	D-3 *
Q307	D-3 *
Q308	C-2 *
Q309	C-4 *
Q310	C-4 *
Q311	D-4 *
Q312	A-3 *
Q313	C-3 *
Q314	A-4 *
Q315	D-2 *
Q318	B-1 *
Q319	C-2 *
Q320	B-4 *
Q321	A-4 *
RV101	J-2
RV102	J-2
RV103	J-3
RV202	E-3
RV203	F-3
RV204	F-3
TP101	J-1
TP102	H-1
TP103	H-2
TP104	G-1
TP105	G-1
TP106	H-2
TP201	D-4
TP202	D-4
S1	E-1
S2	C-1

* mark ; B SIDE mount

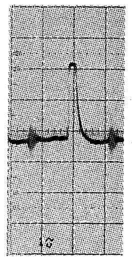

J
H
G
F
E
D
C
B
A
1
2
3
4
NR-40
1-643-484-12
SONY
MADE IN JAPAN
DIP
CN101
CN102
CN103
CN201
CN301
CN302
CN213
RV101
RV102
RV103
RV202
RV203
RV204
TP101
TP102
TP103
TP104
TP105
TP106
TP201
E201
S1
A-8270
530-A

NR-40A — A SIDE —
1-643-484-12 (1)
SVP-9020

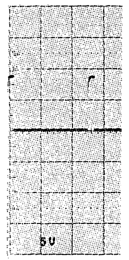

A
C
D
E
F
G
H
J
1
2
3
4
NR-40
SONY
MADE IN JAPAN
CN101
CN102
CN103
CN201
CN213
CN301
CN302
RV101
RV102
RV202
RV203
RV204
TP101
TP103
TP106
TP201
E201

NR-40A — B SIDE —
1-643-484-12 (1)
SVP-9020

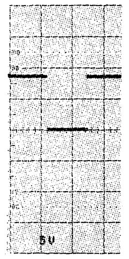
① TP106 (



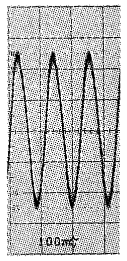
② TP102 (



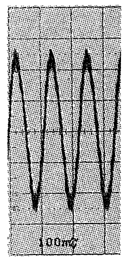
③ TP103 (

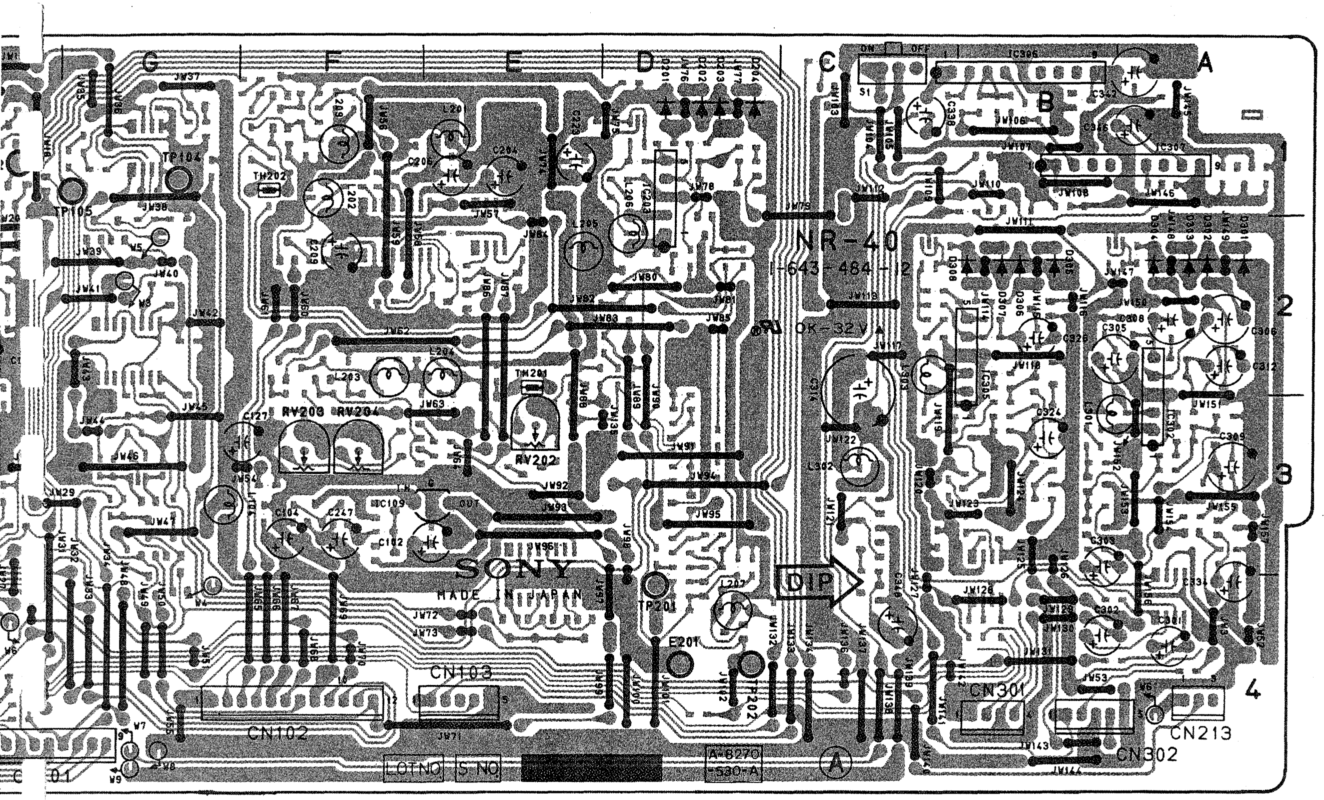


④ TP101 (

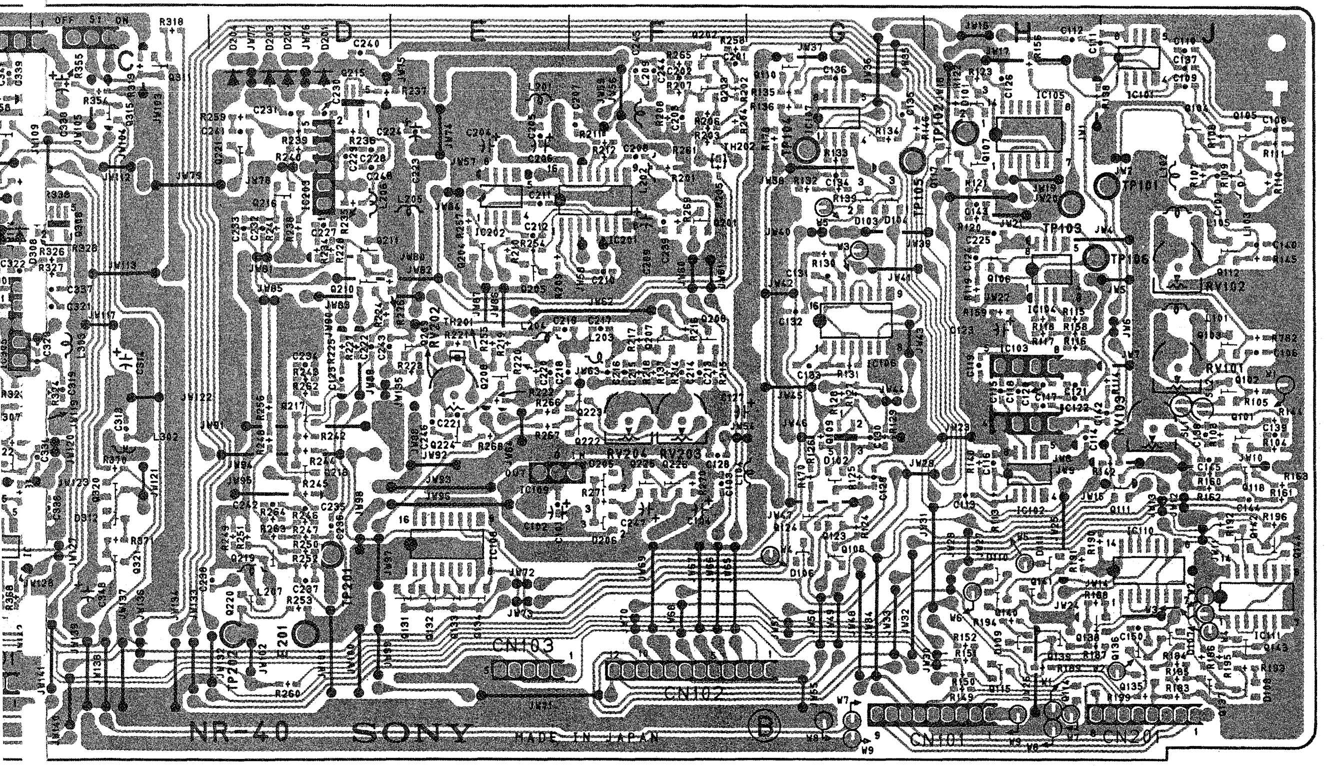


⑤ TP104 (



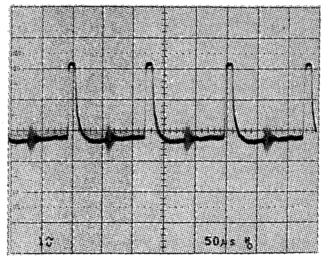

NR-40
1-643-484-12
SONY
MADE IN JAPAN
DIP
CN102
CN103
CN301
CN302
CN213
TP104
TP105
TP201
RV200
RV201
RV202
A
B
C
D
E
F
G
1
2
3
4

NR-40A — A SIDE —
1-643-484-12 (1)
SVP-9020

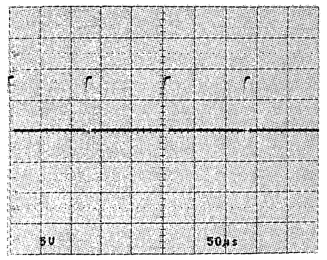

NR-40
SONY
MADE IN JAPAN
CN101
CN102
CN103
CN201
TP101
TP103
TP106
RV101
RV203
RV204
C
D
E
F
G
H
J

NR-40A — B SIDE —
1-643-484-12 (1)
SVP-9020

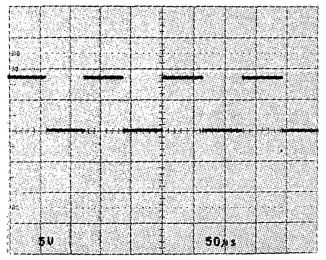
① TP106 (H-2) PB mode



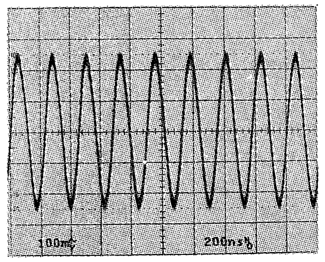
② TP102 (H-1) PB mode



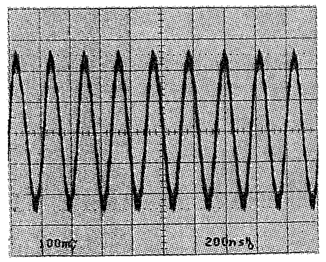
③ TP103 (H-2) PB mode



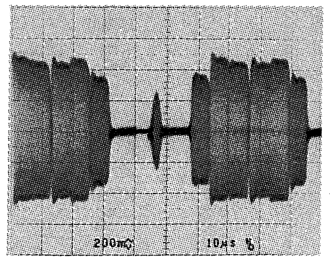
④ TP101 (J-1) PB mode



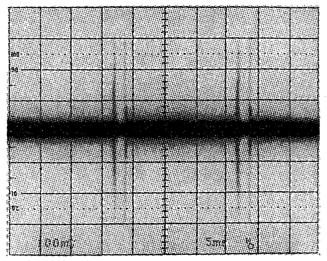
⑤ TP104 (G-1) PB mode



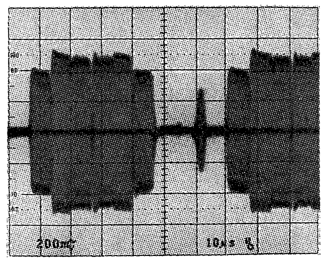
⑥ TP105 (G-1) PB mode



⑦ TP201 (D-4) PB mode



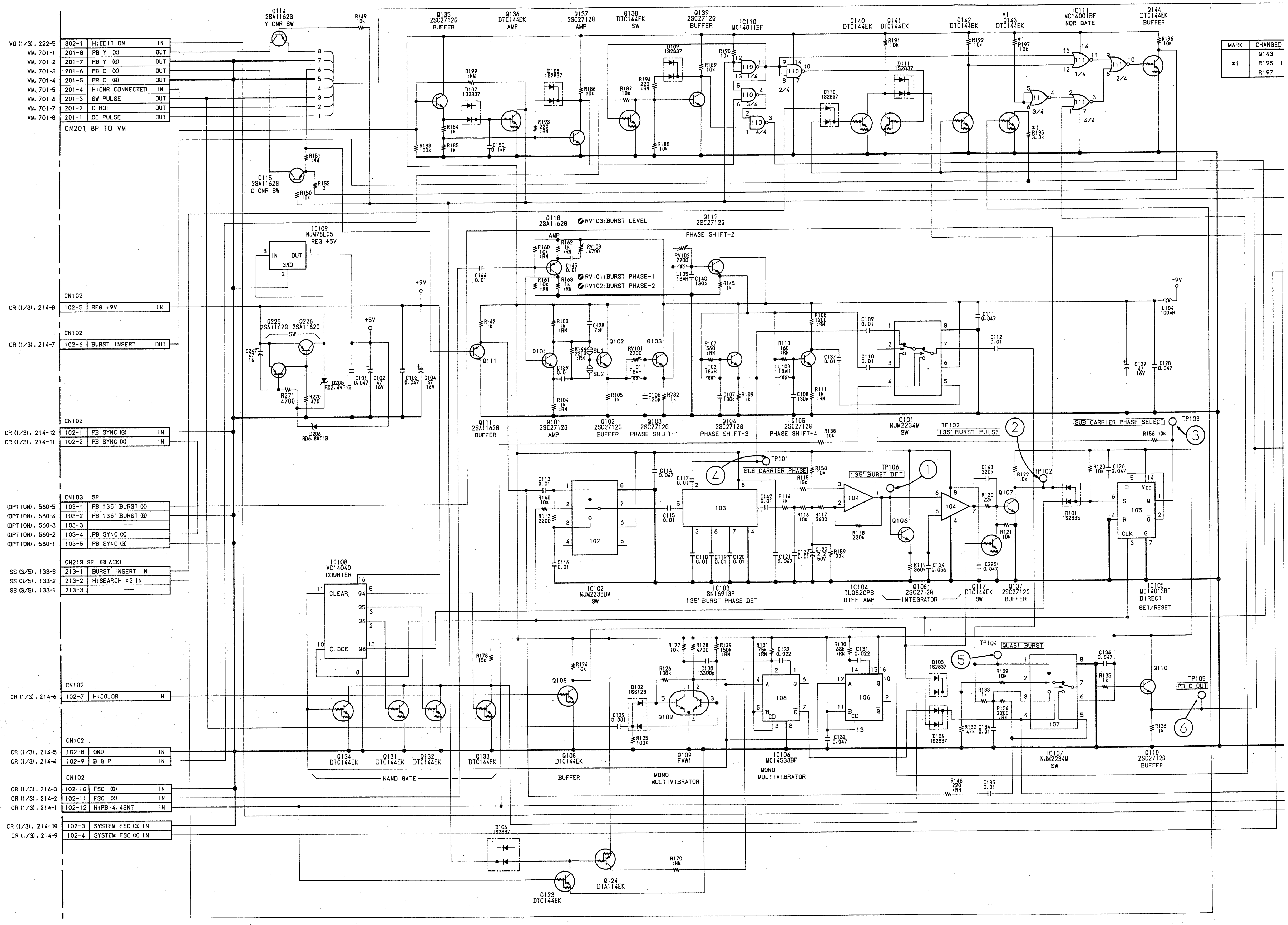
⑧ TP202 (D-4) PB mode



Measurement Condition
PB mode: KRV-45HPS

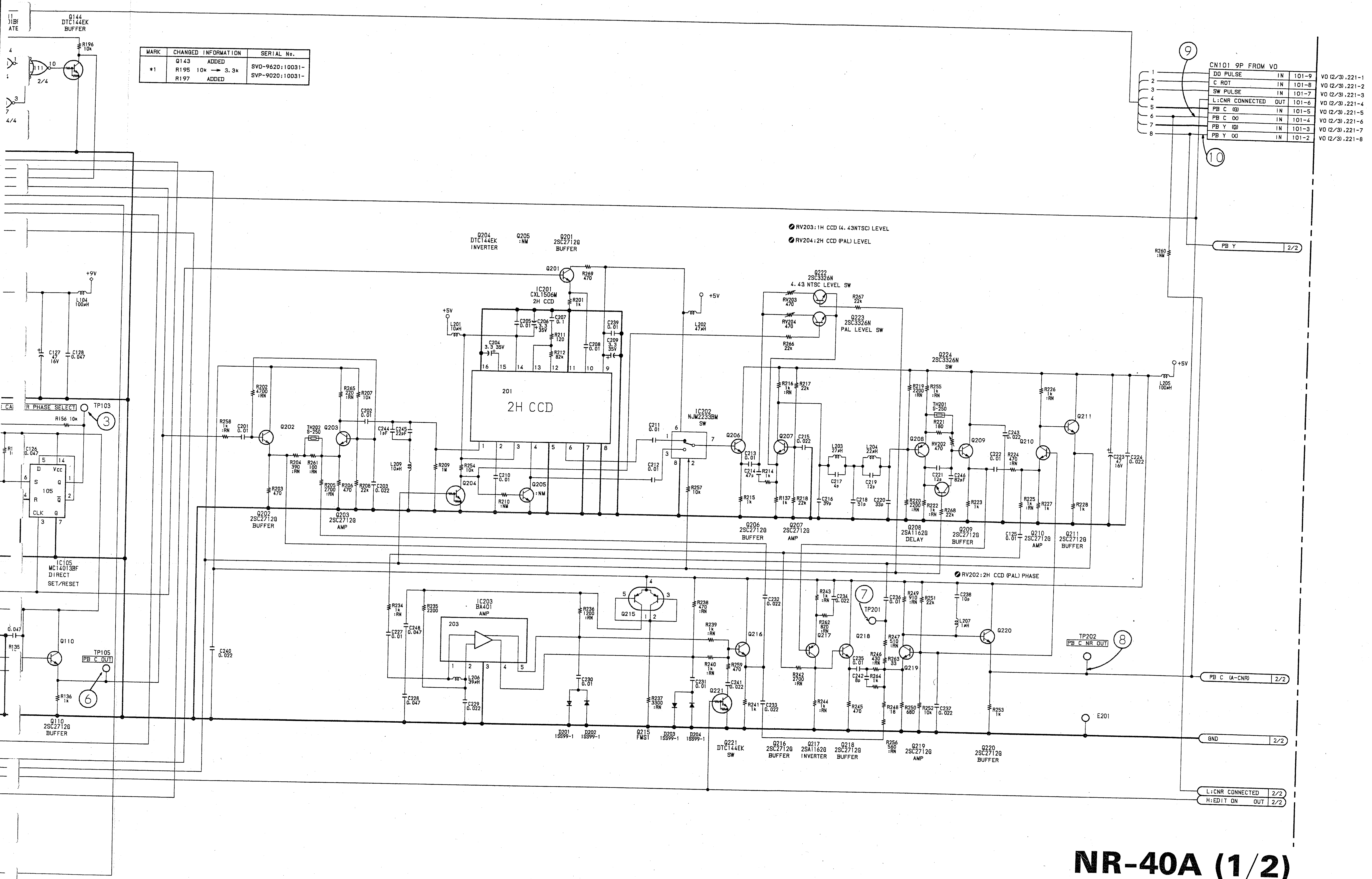
NR-40A (1/2); NOISE REDUCER

MARK	CHANGED
*1	Q143 R195 1 R197


VO (1/3), 222-5
VM, 701-1
VM, 701-2
VM, 701-3
VM, 701-4
VM, 701-5
VM, 701-6
VM, 701-7
VM, 701-8
302-1 H:EDIT ON IN
201-8 PB Y (X) OUT
201-7 PB Y (G) OUT
201-6 PB C (X) OUT
201-5 PB C (G) OUT
201-4 H:CNR CONNECTED IN
201-3 SW PULSE OUT
201-2 C ROT OUT
201-1 DO PULSE OUT
CN201 8P TO VM
CN102
CR (1/3), 214-8
102-5 REG +9V IN
CN102
CR (1/3), 214-7
102-6 BURST INSERT OUT
CN102
CR (1/3), 214-12
CR (1/3), 214-11
102-1 PB SYNC (G) IN
102-2 PB SYNC (X) IN
CN103 5P
(OPTION), 560-5
(OPTION), 560-4
(OPTION), 560-3
(OPTION), 560-2
(OPTION), 560-1
103-1 PB 135° BURST (X)
103-2 PB 135° BURST (G)
103-3 —
103-4 PB SYNC (X)
103-5 PB SYNC (G)
CN213 3P (BLACK)
SS (3/5), 133-3
SS (3/5), 133-2
SS (3/5), 133-1
213-1 BURST INSERT IN
213-2 H:SEARCH ×2 IN
213-3 —
CN102
CR (1/3), 214-6
102-7 H:COLOR IN
CN102
CR (1/3), 214-5
CR (1/3), 214-4
102-8 GND IN
102-9 B G P IN
CN102
CR (1/3), 214-3
CR (1/3), 214-2
CR (1/3), 214-1
102-10 FSC (G) IN
102-11 FSC (X) IN
102-12 H:PB-4.43NT IN
CR (1/3), 214-10
CR (1/3), 214-9
102-3 SYSTEM FSC (G) IN
102-4 SYSTEM FSC (X) IN
Q114 2SA1162G Y CNR SW
Q115 2SA1162G C CNR SW
R149 10k
R151 :NM
R152 0
R150 10k
Q135 2SC2712G BUFFER
Q136 DTC144EK AMP
Q137 2SC2712G AMP
Q138 DTC144EK SW
Q139 2SC2712G BUFFER
IC110 MC14011BF
Q140 DTC144EK
Q141 DTC144EK
Q142 DTC144EK
*1 Q143 DTC144EK
IC111 MC14001BF NOR GATE
Q144 DTC144EK BUFFER
R199 :NM
D107 1S2837
D108 1S2837
D109 1S2837
D110 1S2837
D111 1S2837
R183 100k
R184 1k
R185 1k
C150 0.1μF
R186 10k
R193 220 :RN
R187 10k
R194 220 :RN
R188 10k
R189 10k
R190 10k
R191 10k
R192 10k
*1 R197 10k
R196 10k
*1 R195 3.3k
IC109 NJM78L05 REG +5V
IN OUT GND
+9V
+5V
Q225 2SA1162G
Q226 2SA1162G
SW
C247 47 16
D205 RD2.4MT1B
R271 4700
R270 470
C101 0.047
C102 47 16V
C103 0.047
C104 47 16V
D206 RD6.8MT1B
Q118 2SA1162G AMP
RV103:BURST LEVEL
RV101:BURST PHASE-1
RV102:BURST PHASE-2
Q112 2SC2712G PHASE SHIFT-2
R160 10k :RN
R162 1k :RN
RV103 4700
C145 0.01
R161 10k :RN
R163 1k :RN
RV102 2200
L105 18μH
C140 130p
R145 1k
C144 0.01
R142 1k
Q111 2SA1162G BUFFER
R103 1k :RN
C138 7p
R144 2200 :RN
SL1
SL2
C139 0.01
R104 1k :RN
RV101 2200
L101 18μH
R105 1k
C106 120p
R782 1k
Q101 2SC2712G AMP
Q102 2SC2712G BUFFER
Q103 2SC2712G PHASE SHIFT-1
R107 560 :RN
L102 18μH
C107 130p
R109 1k
Q104 2SC2712G PHASE SHIFT-3
R108 1200 :RN
R110 160 :RN
L103 18μH
C137 0.01
C108 130p
R111 1k :RN
Q105 2SC2712G PHASE SHIFT-4
R138 10k
C109 0.01
C110 0.01
IC101 NJM2234M SW
C111 0.047
C112 0.01
L104 100μH
C127 47 16V
C128 0.047
TP102 135° BURST PULSE
SUB CARRIER PHASE SELECT
TP103
R156 10k
②
③
④
TP101
SUB CARRIER PHASE
①
TP106 135° BURST DET
C113 0.01
R140 10k
R113 2200
C116 0.01
IC102 NJM2233BM SW
C114 0.047
C117 0.01
C115 0.01
IC103 SN16913P 135° BURST PHASE DET
C118 0.01
C119 0.01
C120 0.01
C142 0.01
C121 0.047
R114 1k
R158 10k
R115 10k
R116 10k
R117 5600
C122 0.01
C123 2.2 50V
R159 22k
R118 220k
IC104 TL082CPS DIFF AMP
R119 360k
C124 0.056
Q106 2SC2712G INTEGRATOR
C143 220p
R120 22k
R122 10k
R121 10k
C225 0.047
Q117 DTC144EK SW
Q107 2SC2712G BUFFER
D101 1S2835
R123 10k
C126 0.047
IC105 MC14013BF DIRECT SET/RESET
D Vcc S Q R Q̄ CLK G
IC108 MC14040 COUNTER
CLEAR Q4 Q5 Q6 CLOCK Q8
R178 10k
R124 10k
Q108 DTC144EK BUFFER
Q134 DTC144EK
Q131 DTC144EK
Q132 DTC144EK
Q133 DTC144EK
NAND GATE
R127 10k
R128 4700
R129 150k :RN
R126 100k
C130 3300p
D102 1SS123
C129 0.001
R125 100k
Q109 FMW1 MONO MULTIVIBRATOR
R131 75k :RN
C133 0.022
R130 68k :RN
C131 0.022
IC106 MC14538BF MONO MULTIVIBRATOR
C132 0.047
TP104 QUASI BURST
⑤
D103 1S2837
D104 1S2837
R139 10k
R133 1k
R134 2200 :RN
R132 47k
C134 0.01
IC107 NJM2234M SW
C136 0.047
R135 1k
Q110 2SC2712G BUFFER
TP105 PB C OUT
⑥
R136 1k
R146 220 :RN
C135 0.01
D106 1S2837
Q124 DTA114EK
Q123 DTC144EK
R170 :NM
A
B
C
D
E
F
G
H

NR-40A (1/2)

MARK	CHANGED INFORMATION	SERIAL No.
*1	Q143 ADDED R195 10k → 3.3k R197 ADDED	SVO-9620;10031- SVP-9020;10031-

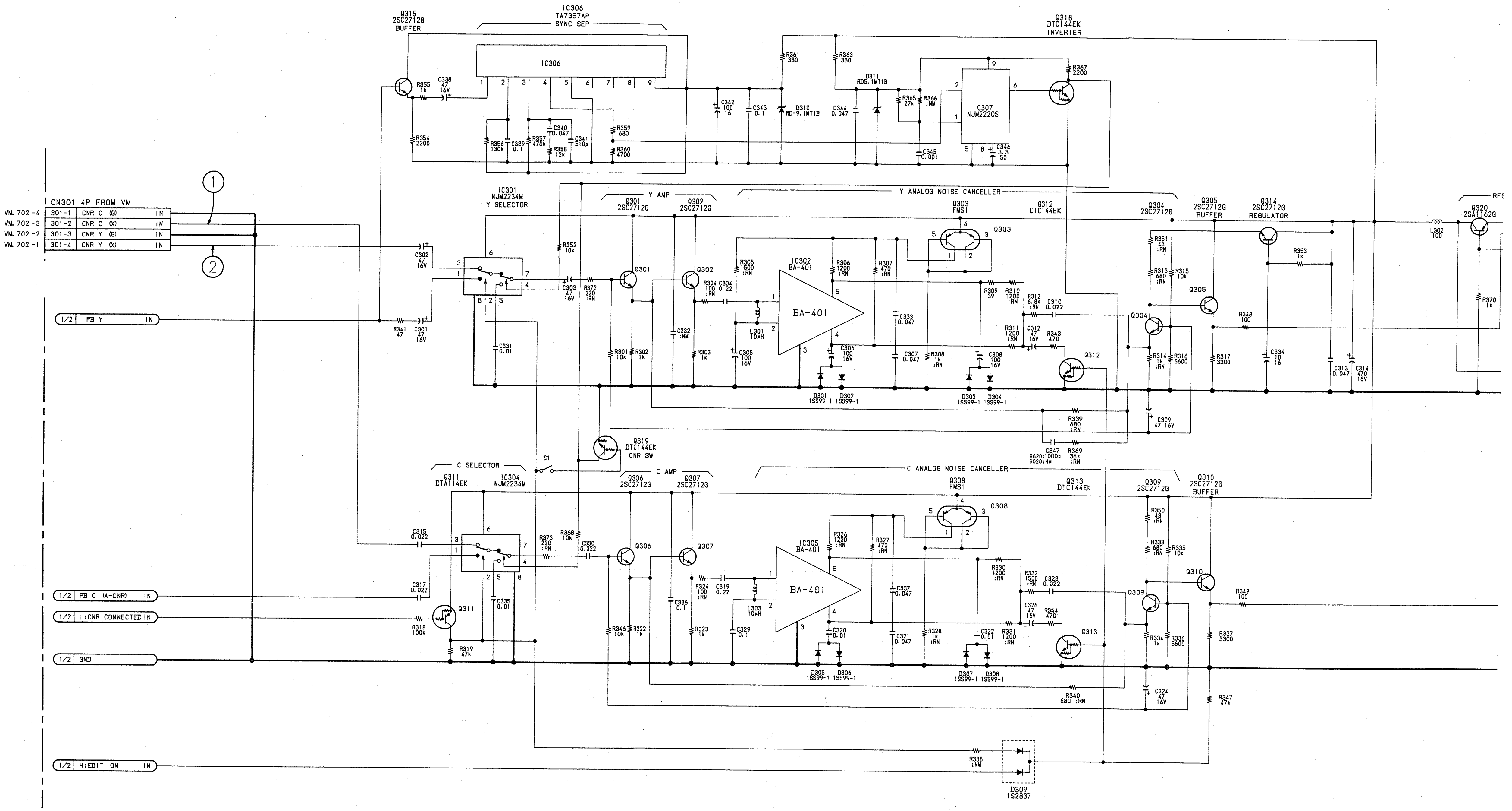

Q144 DTC144EK BUFFER
R196 10k
2/4
4/4
+9V
L104 100μH
C127 47 16V
C128 0.047
TP103
R PHASE SELECT
③
R156 10k
C126 0.047
IC105 MC14013BF DIRECT SET/RESET
D Vcc S Q R Q̄ CLK G
Q110
TP105 PB C OUT
⑥
R136 1k
R135
Q110 2SC2712G BUFFER
Q204 DTC144EK INVERTER
Q205 :NM
Q201 2SC2712G BUFFER
Q201
R269 470
R201 1k
IC201 CXL1506M 2H CCD
+5V
L201 10μH
C204 3.3 35V
C205 0.01
C206 3.3 35V
C207 0.1
R211 120
R212 82k
C208 0.01
C239 0.01
C209 3.3 35V
201
2H CCD
R202 4700 :RN
R265 220 :RN
R207 10k
C202 0.01
R258 1k :RN
C201 0.01
Q202
TH202 S-250
Q203
C244 1pF
C245 22pF
L209 10μH
R204 390 :RN
R261 100 :RN
R203 470
R205 2700 :RN
R206 470
R208 22k
C203 0.022
Q202 2SC2712G BUFFER
Q203 2SC2712G AMP
R209 1M
R254 10k
Q204
C210 0.01
R210 :NM
Q205 :NM
C211 0.01
C212 0.01
IC202 NJM2233BM SW
L202 47μH
+5V
R257 10k
RV203:1H CCD (4.43NTSC) LEVEL
RV204:2H CCD (PAL) LEVEL
Q222 2SC3326N 4.43 NTSC LEVEL SW
RV203 470
RV204 470
R267 22k
Q223 2SC3326N PAL LEVEL SW
R266 22k
Q224 2SC3326N SW
+5V
L205 100μH
Q206
C213 0.01
C214 47p
R214 1k
R216 1k :RN
R217 22k
Q207
C215 0.022
L203 27μH
L204 22μH
C217 4p
C219 12p
R215 1k
R137 1k
R218 22k
C216 39p
C218 51p
C220 33p
Q206 2SC2712G BUFFER
Q207 2SC2712G AMP
R219 2200 :RN
R255 1k :RN
TH201 S-250
R221 180
RV202 470
Q208
Q209
C243 0.022
Q210
C221 12p
C246 82pF
C222 0.01
R224 470 :RN
R226 1k :RN
Q211
C223 47 16V
C224 0.022
R220 2200 :RN
R222 1k :RN
R268 22k
R223 1k
R225 1k :RN
R227 1k
R228 1k
C125 0.01
Q208 2SA1162G DELAY
Q209 2SC2712G BUFFER
Q210 2SC2712G AMP
Q211 2SC2712G BUFFER
R260 :NM
PB Y 2/2
CN101 9P FROM VO
1 DO PULSE IN 101-9 VO (2/3),221-1
2 C ROT IN 101-8 VO (2/3),221-2
3 SW PULSE IN 101-7 VO (2/3),221-3
4 L;CNR CONNECTED OUT 101-6 VO (2/3),221-4
5 PB C (G) IN 101-5 VO (2/3),221-5
6 PB C (X) IN 101-4 VO (2/3),221-6
7 PB Y (G) IN 101-3 VO (2/3),221-7
8 PB Y (X) IN 101-2 VO (2/3),221-8
⑨
⑩
RV202:2H CCD (PAL) PHASE
IC203 BA401 AMP
203
R234 1k :RN
R235 2200
C227 0.01
C248 0.047
C228 0.047
L206 39μH
C229 0.022
R236 1200 :RN
C230 0.01
D201 1SS99-1
D202 1SS99-1
Q215
Q215 FMS1
R237 3300 :RN
D203 1SS99-1
D204 1SS99-1
R238 470 :RN
R239 1k :RN
R240 1k :RN
R259 470
C231 0.01
C241 0.022
Q221
Q221 DTC144EK SW
Q216
R241 1k
C232 0.022
C233 0.022
C240 0.022
R243 1k :RN
C234 0.022
R262 820 :RN
Q217
Q218
R242 2700 :RN
R244 1k :RN
R245 470
⑦
TP201
C236 0.01
R249 910 :RN
R251 22k
C238 10p
L207 1mH
R247 510 :RN
R246 430 :RN
R263 33
Q219
C235 0.01
C242 8p
R264 1k
R248 18
R250 680
R252 10k
C237 0.022
R256 560 :RN
Q220
R253 1k
TP202 PB C NR OUT
⑧
PB C (A-CNR) 2/2
E201
GND 2/2
Q216 2SC2712G BUFFER
Q217 2SA1162G INVERTER
Q218 2SC2712G BUFFER
Q219 2SC2712G AMP
Q220 2SC2712G BUFFER
L:CNR CONNECTED 2/2
H:EDIT ON OUT 2/2

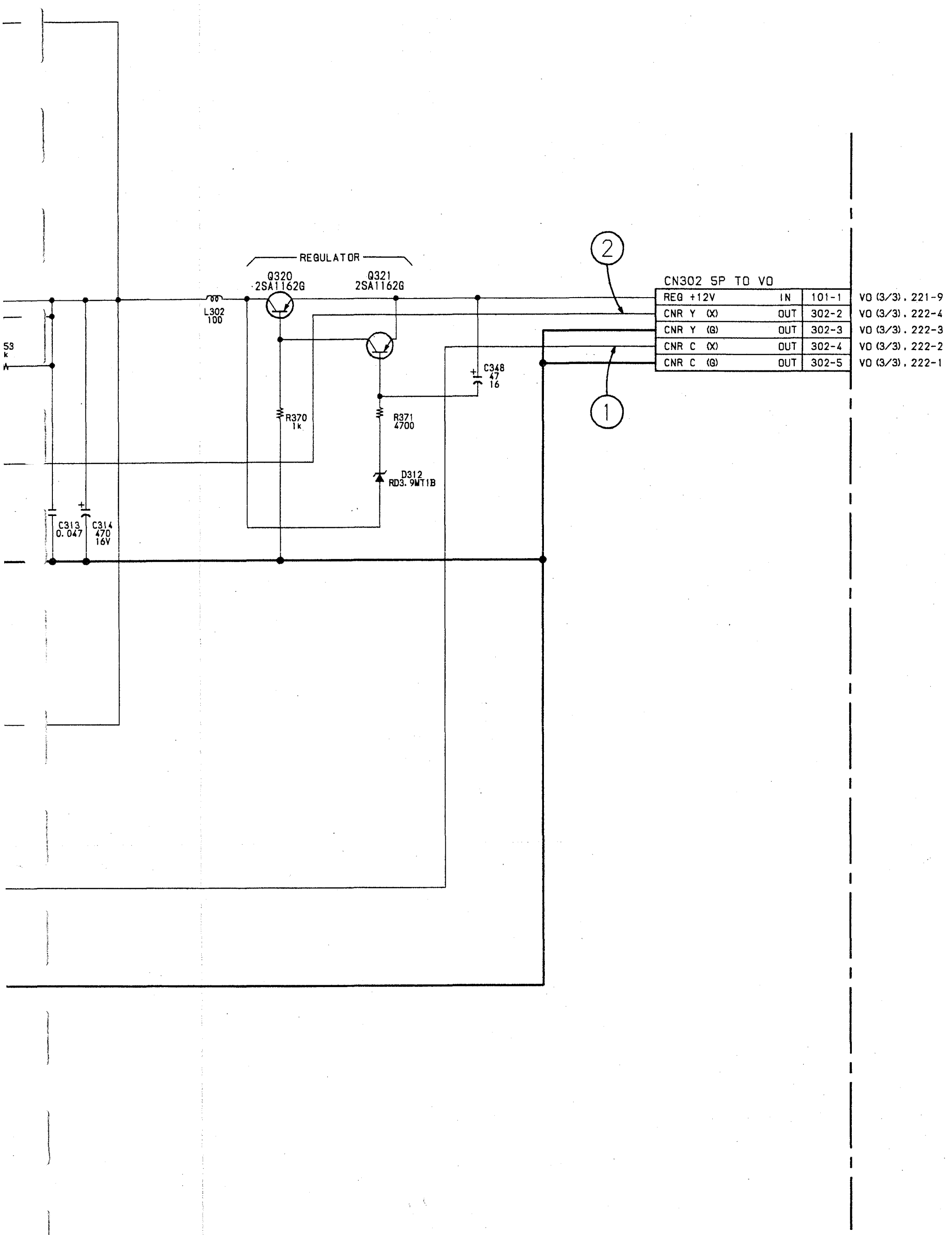
NR-40A (1/2)

1-643-484-12 (1)
SVP-9020

14-11

NR-40A (2/2); NOISE REDUCER

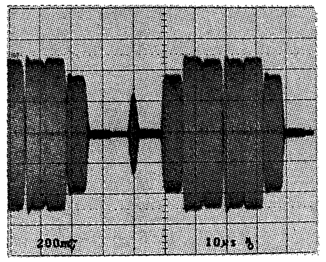

Q315
2SC2712G
BUFFER
IC306
TA7357AP
SYNC SEP
IC306
R355 1k
C338 47 16V
R354 2200
R356 130k
C339 0.1
R357 470k
C340 0.047
R358 12k
C341 510p
R359 680
R360 4700
C342 100 16
C343 0.1
R361 330
D310 RD-9.1MT1B
R363 330
D311 RDS.1MT1B
C344 0.047
R365 27k
R366 :NM
C345 0.001
IC307
NJM2220S
C346 3.3 50
Q318
DTC144EK
INVERTER
R367 2200
CN301 4P FROM VM
VM. 702-4
VM. 702-3
VM. 702-2
VM. 702-1
301-1
301-2
301-3
301-4
CNR C (G)
CNR C (X)
CNR Y (G)
CNR Y (X)
IN
①
②
1/2 PB Y IN
R341 47
C301 47 16V
C302 47 16V
IC301
NJM2234M
Y SELECTOR
C331 0.01
R352 10k
C303 47 16V
R372 220 :RN
Y AMP
Q301
2SC2712G
Q302
2SC2712G
R301 10k
R302 1k
C332 :NM
R303 1k
R304 100 :RN
C304 0.22
Y ANALOG NOISE CANCELLER
R305 1500 :RN
C305 100 16V
L301 10μH
IC302
BA-401
BA-401
R306 1200 :RN
C306 100 16V
D301 1SS99-1
D302 1SS99-1
R307 470 :RN
C333 0.047
C307 0.047
R308 1k :RN
Q303
FMS1
Q303
C308 100 16V
D303 1SS99-1
D304 1SS99-1
R309 39
R310 1200 :RN
R311 1200 :RN
R312 6.8k :RN
C310 0.022
C312 47 16V
R343 470
Q312
DTC144EK
Q312
R339 680 :RN
C347 9620:1000p 9020:NM
R369 36k :RN
Q304
2SC2712G
Q304
R351 43 :RN
R313 680 :RN
R315 10k
R314 1k :RN
R316 5600
C309 47 16V
Q305
2SC2712G
BUFFER
Q305
R317 3300
R348 100
Q314
2SC2712G
REGULATOR
R353 1k
C334 10 16
C313 0.047
C314 470 16V
L302 100
Q320
2SA1162G
R370 1k
REG
Q319
DTC144EK
CNR SW
S1
C SELECTOR
Q311
DTA114EK
IC304
NJM2234M
C315 0.022
C317 0.022
Q311
R318 100k
R319 47k
C335 0.01
R373 220 :RN
R368 10k
C330 0.022
C AMP
Q306
2SC2712G
Q307
2SC2712G
R346 10k
R322 1k
C336 0.1
R323 1k
R324 100 :RN
C319 0.22
L303 10μH
C329 0.1
C ANALOG NOISE CANCELLER
IC305
BA-401
BA-401
R326 1200 :RN
C320 0.01
D305 1SS99-1
D306 1SS99-1
R327 470 :RN
C337 0.047
C321 0.047
R328 1k :RN
Q308
FMS1
Q308
C322 0.01
D307 1SS99-1
D308 1SS99-1
R330 1200 :RN
R331 1200 :RN
R332 1500 :RN
C323 0.022
C326 47 16V
R344 470
Q313
DTC144EK
Q313
R340 680 :RN
Q309
2SC2712G
Q309
R350 43 :RN
R333 680 :RN
R335 10k
R334 1k
R336 5600
C324 47 16V
Q310
2SC2712G
BUFFER
Q310
R337 3300
R349 100
R347 47k
1/2 PB C (A-CNR) IN
1/2 L:CNR CONNECTED IN
1/2 GND
1/2 H:EDIT ON IN
R338 :NM
D309
1S2837


REGULATOR
Q320
2SA1162G
Q321
2SA1162G
L302
100
R370
1k
R371
4700
D312
RD3.9MT1B
C348
47
16
C313
0.047
C314
470
16V
53
k
②
①
CN302 5P TO VO
REG +12V IN 101-1 VO (3/3), 221-9
CNR Y (X) OUT 302-2 VO (3/3), 222-4
CNR Y (G) OUT 302-3 VO (3/3), 222-3
CNR C (X) OUT 302-4 VO (3/3), 222-2
CNR C (G) OUT 302-5 VO (3/3), 222-1

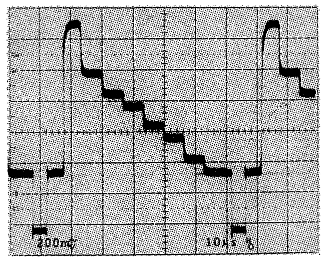
NR-40A (2/2)

1-643-484-12 (1)
SVP-9020

① *CN301-2 (C-4) PB mode (dnr- ON)
CN302-4 (B-4) PB mode



② *CN301-4 (C-4) PB mode (dnr- ON)
CN302-2 (B-4) PB mode

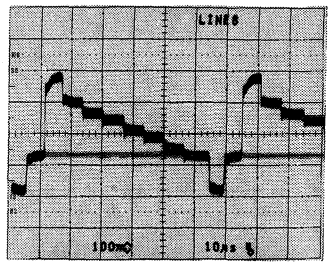


Measurement Condition

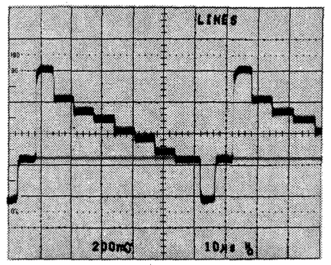
PB mode: KRV-45HPS
*dnr- on (Refer to Menu Items.)
SVBK-150 board is mounted.

VO-37C (1/3); Y PROCESS

① TP203 (G-5 *) PB mode



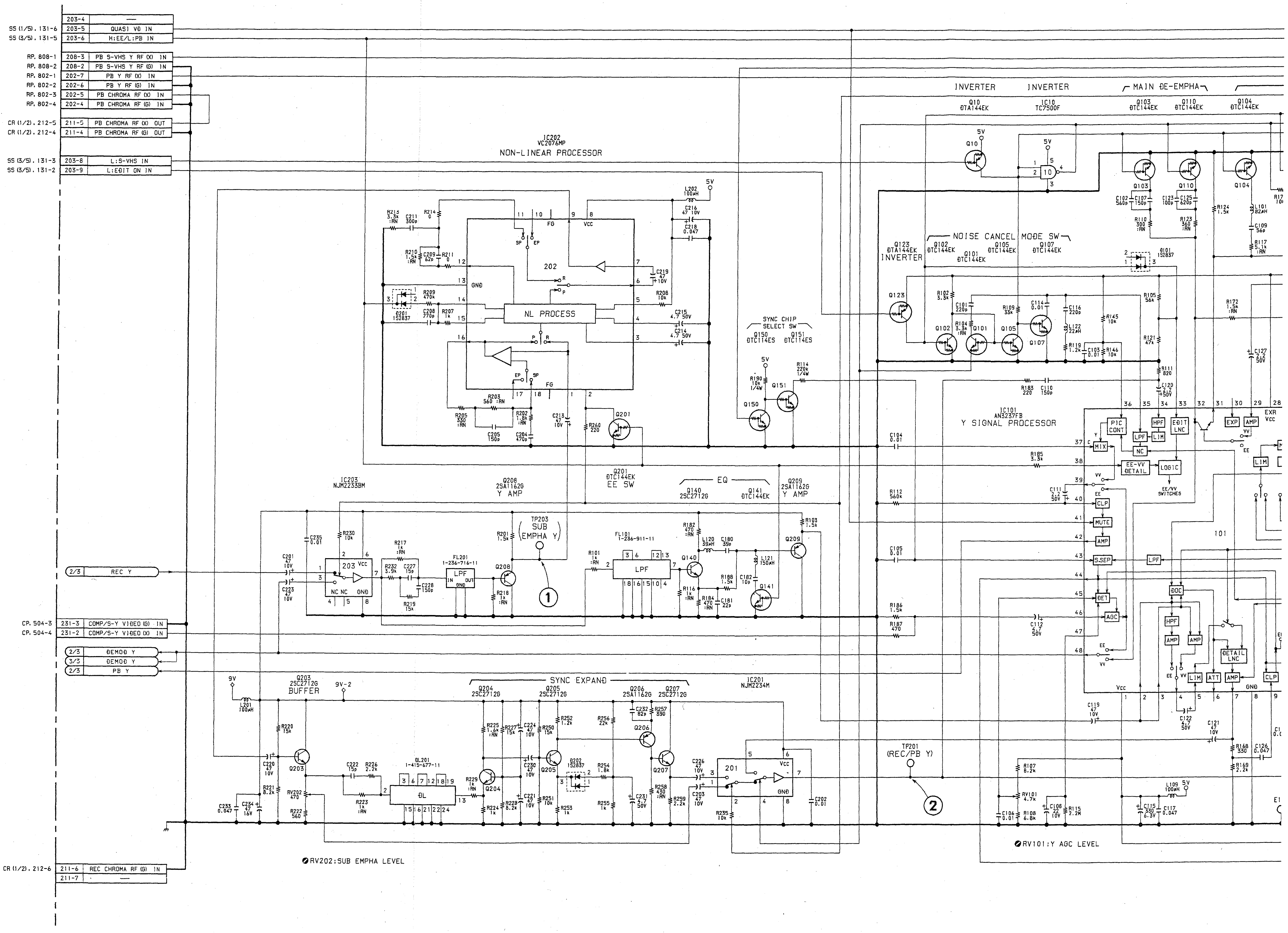
② TP201 (E-5 *) PB mode

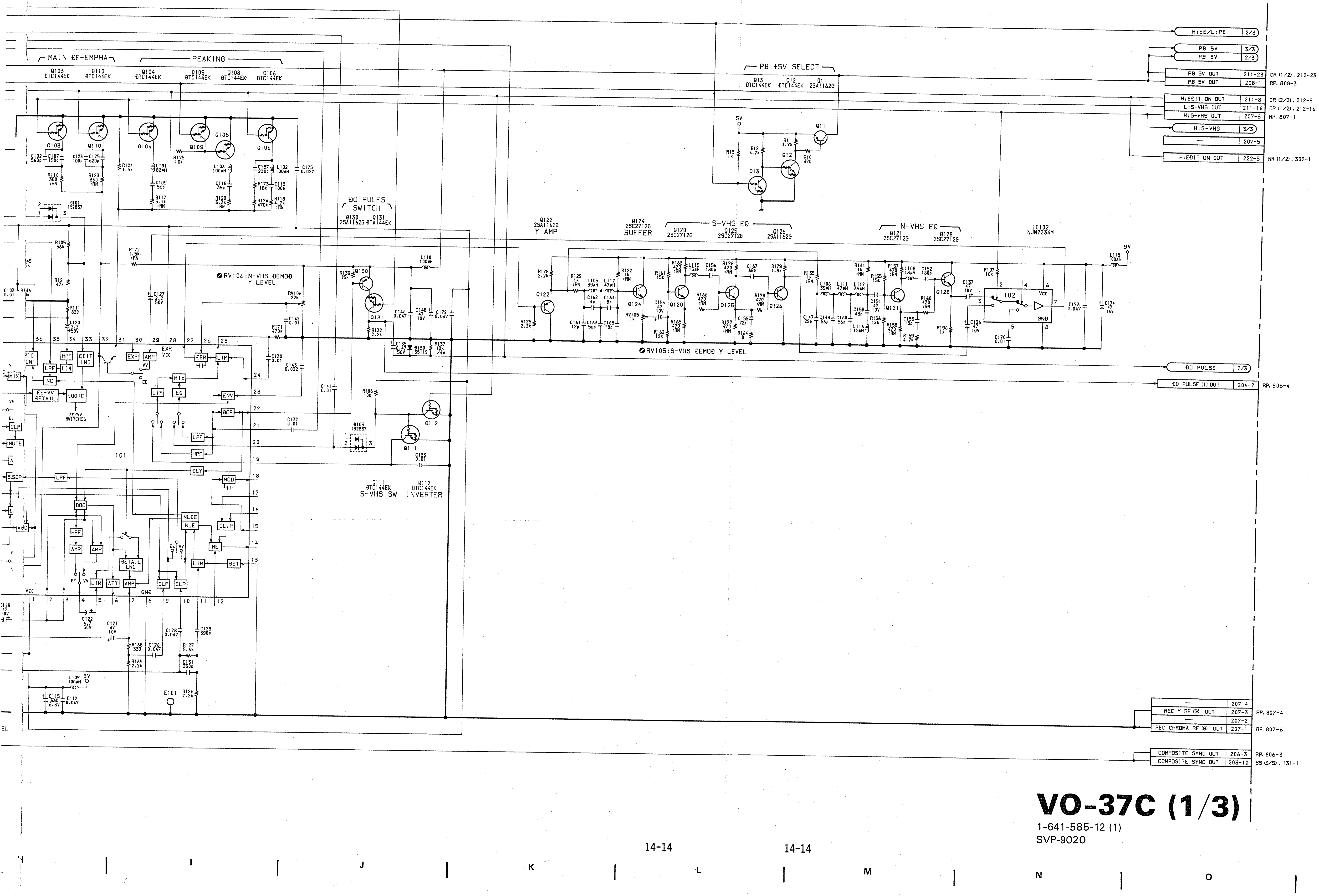


Measurement Condition

PB mode: KRV-45HPS

* mark; B SIDE mount


QUASI V0 IN
H:EE/L:PB IN
PB S-VHS Y RF (X) IN
PB S-VHS Y RF (G) IN
PB Y RF (X) IN
PB Y RF (G) IN
PB CHROMA RF (X) IN
PB CHROMA RF (G) IN
PB CHROMA RF (X) OUT
PB CHROMA RF (G) OUT
L:S-VHS IN
L:EDIT ON IN
IC202 VC2076MP
NON-LINEAR PROCESSOR
NL PROCESS
INVERTER
INVERTER
MAIN DE-EMPHA
NOISE CANCEL MODE SW
SYNC CHIP SELECT SW
IC101 AN3237FB
Y SIGNAL PROCESSOR
IC203 NJM2233BM
Q208 2SA1162G Y AMP
TP203 SUB EMPHA Y
Q201 DTC144EK EE SW
EQ
Q209 2SA1162G Y AMP
REC Y
COMP/S-Y VIDEO (G) IN
COMP/S-Y VIDEO (G) IN
DEMOD Y
DEMOD Y
PB Y
Q203 2SC2712G BUFFER
SYNC EXPAND
IC201 NJM2234M
TP201 (REC/PB Y)
REC CHROMA RF (G) IN
RV202:SUB EMPHA LEVEL
RV101:Y AGC LEVEL
LPF
①
②

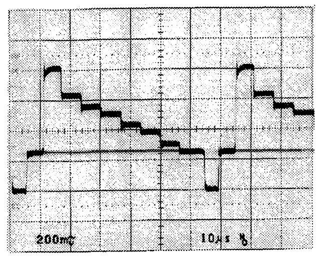

MAIN DE-EMPHA
PEAKING
Q103 DTC144EK
Q110 DTC144EK
Q104 DTC144EK
Q109 DTC144EK
Q108 DTC144EK
Q106 DTC144EK
PB +5V SELECT
Q13 DTC144EK
Q12 DTC144EK
Q11 2SA1162G
DO PULES SWITCH
Q130 2SA1162G
Q131 DTA144EK
Q122 2SA1162G Y AMP
Q124 2SC2712G BUFFER
S-VHS EQ
Q120 2SC2712G
Q125 2SC2712G
Q126 2SA1162G
N-VHS EQ
Q121 2SC2712G
Q128 2SC2712G
IC102 NJM2234M
RV106:N-VHS DEMOD Y LEVEL
RV105:S-VHS DEMOD Y LEVEL
Q111 DTC144EK S-VHS SW
Q112 DTC144EK INVERTER
101
H:EE/L:PB 2/3
PB 5V 3/3
PB 5V 2/3
PB 5V OUT 211-23 CR (1/2), 212-23
PB 5V OUT 208-1 RP, 808-3
H:EDIT ON OUT 211-8 CR (2/2), 212-8
L:S-VHS OUT 211-16 CR (1/2), 212-16
H:S-VHS OUT 207-6 RP, 807-1
H:S-VHS 3/3
207-5
H:EDIT ON OUT 222-5 NR (1/2), 302-1
DO PULSE 2/3
DO PULSE (1) OUT 206-2 RP, 806-4
207-4
REC Y RF (G) OUT 207-3 RP, 807-4
207-2
REC CHROMA RF (G) OUT 207-1 RP, 807-6
COMPOSITE SYNC OUT 206-3 RP, 806-3
COMPOSITE SYNC OUT 203-10 SS (3/5), 131-1
9V
5V
E101
H
I
J
K
L
M
N
O
P

VO-37C (1/3)

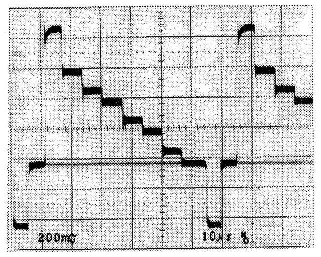
1-641-585-12 (1)
SVP-9020

VO-37C (2/3); DIGITAL COMB FILTER & PB Y/C OUTPUT

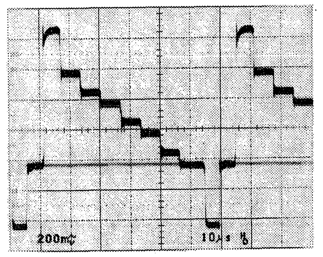
① TP301 (C-5 *) PB mode



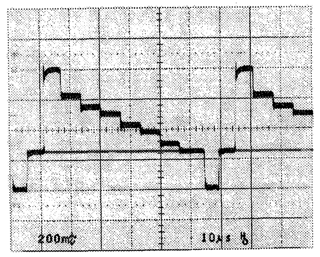
② TP302 (A-5 *) PB mode



③ TP304 (D-2 *) PB mode



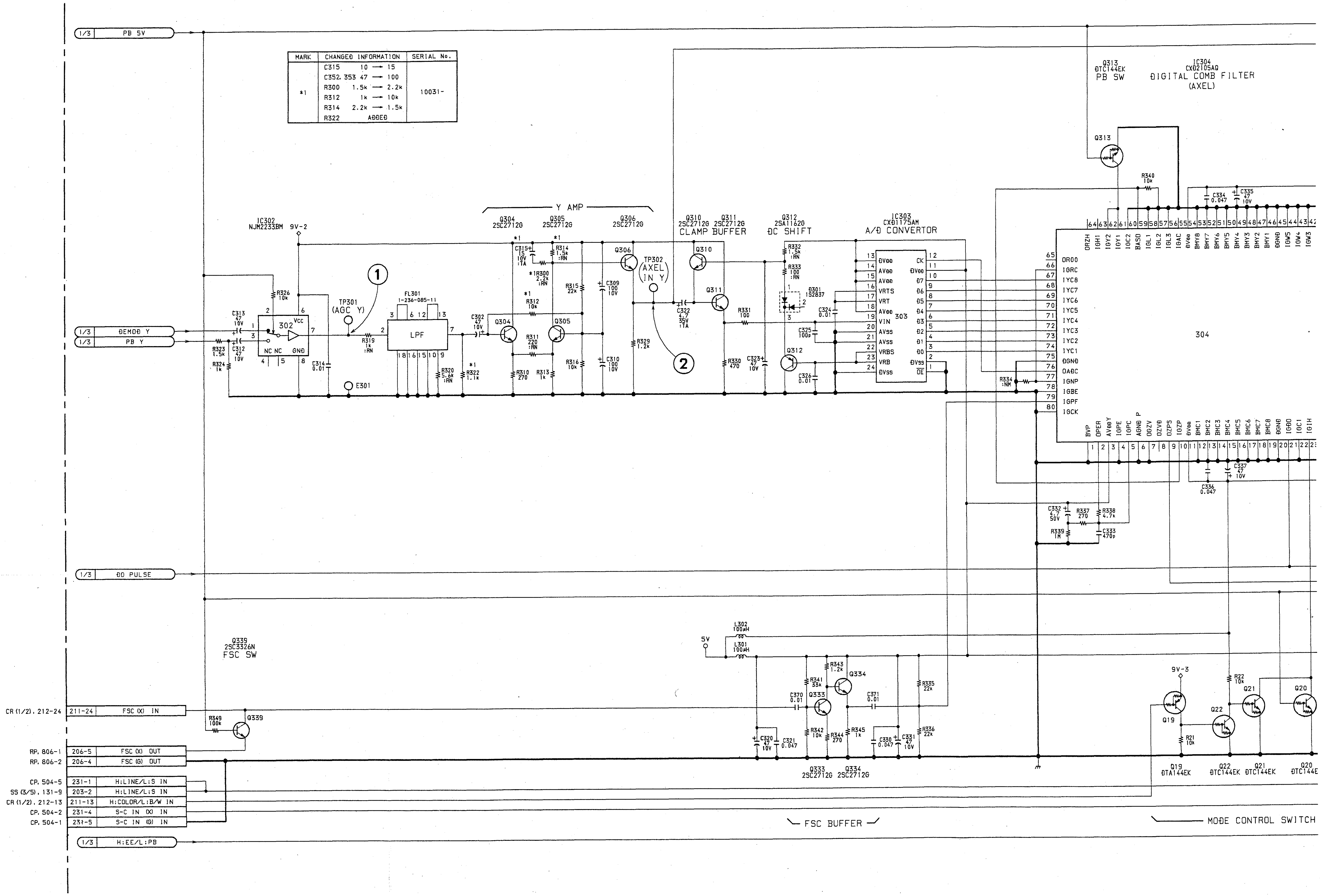
④ TP303 (D-3 *) PB mode



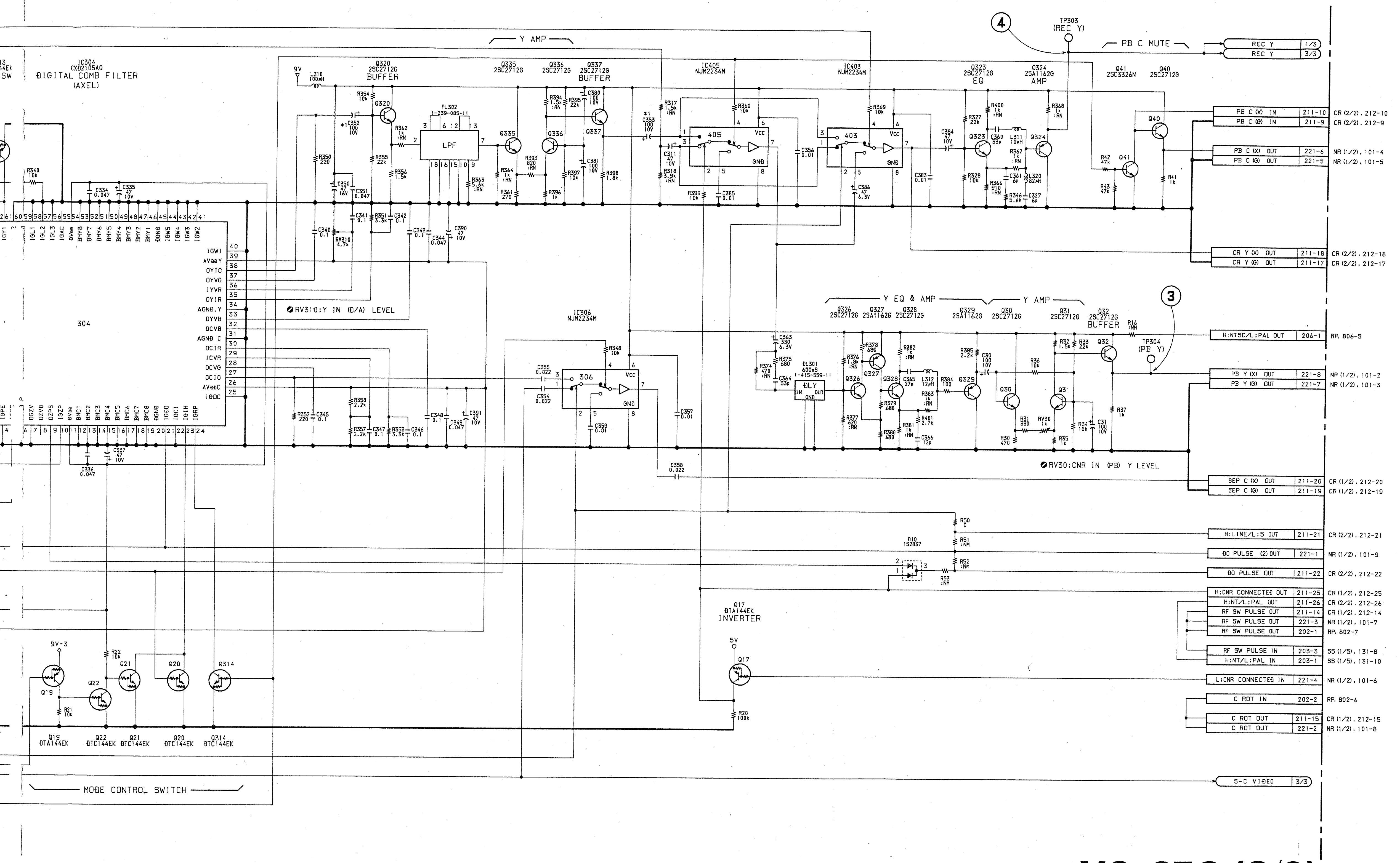
Measurement Condition

PB mode: KRV-45HPS

* mark; B SIDE mount


1/3 PB 5V
1/3 DEMOD Y
1/3 PB Y
1/3 DD PULSE
CR (1/2), 212-24 211-24 FSC (X) IN
RP, 806-1 206-5 FSC (X) OUT
RP, 806-2 206-4 FSC (G) OUT
CP, 504-5 231-1 H;LINE/L;S IN
SS (3/5), 131-9 203-2 H;LINE/L;S IN
CR (1/2), 212-13 211-13 H;COLOR/L;B/W IN
CP, 504-2 231-4 S-C IN (X) IN
CP, 504-1 231-5 S-C IN (G) IN
1/3 H;EE/L;PB
IC302 NJM2233BM
9V-2
TP301 (AGC Y)
FL301 1-236-085-11
LPF
E301
Y AMP
Q304 2SC2712G
Q305 2SC2712G
Q306 2SC2712G
TP302 (AXEL IN Y)
Q310 2SC2712G
Q311 2SC2712G
CLAMP BUFFER
Q312 2SA1162G
DC SHIFT
D301 1S2837
IC303 CXD1175AM
A/D CONVERTOR
Q313 DTC144EK
PB SW
IC304 CXD2105AQ
DIGITAL COMB FILTER (AXEL)
Q339 2SC3326N
FSC SW
5V
L302 100μH
L301 100μH
Q333 2SC2712G
Q334 2SC2712G
FSC BUFFER
9V-3
Q19 DTA144EK
Q22 DTC144EK
Q21 DTC144EK
Q20 DTC144E
MODE CONTROL SWITCH

MARK	CHANGED INFORMATION	SERIAL No.
*1	C315 10 → 15 C352, 353 47 → 100 R300 1.5k → 2.2k R312 1k → 10k R314 2.2k → 1.5k R322 ADDED	10031-

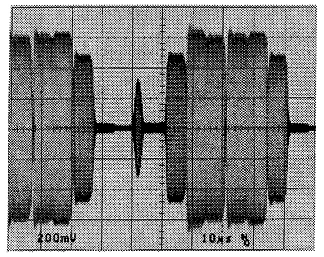

IC304 CXD2105AQ
DIGITAL COMB FILTER (AXEL)
304
Y AMP
Q320 2SC2712G BUFFER
Q335 2SC2712G
Q336 2SC2712G
Q337 2SC2712G BUFFER
FL302 1-239-085-11
LPF
IC405 NJM2234M
IC403 NJM2234M
Q323 2SC2712G EQ
Q324 2SA1162G AMP
Q41 2SC3326N
Q40 2SC2712G
TP303 (REC Y)
PB C MUTE
④
REC Y 1/3
REC Y 3/3
PB C (X) IN 211-10 CR (2/2), 212-10
PB C (G) IN 211-9 CR (2/2), 212-9
PB C (X) OUT 221-6 NR (1/2), 101-4
PB C (G) OUT 221-5 NR (1/2), 101-5
CR Y (X) OUT 211-18 CR (2/2), 212-18
CR Y (G) OUT 211-17 CR (2/2), 212-17
③
Y EQ & AMP
Y AMP
Q326 2SC2712G
Q327 2SA1162G
Q328 2SC2712G
Q329 2SA1162G
Q30 2SC2712G
Q31 2SC2712G
Q32 2SC2712G BUFFER
TP304 (PB Y)
DL301 600nS 1-415-559-11
DLY
IC306 NJM2234M
306
RV310:Y IN (D/A) LEVEL
RV30:CNR IN (PB) Y LEVEL
H:NTSC/L:PAL OUT 206-1 RP, 806-5
PB Y (X) OUT 221-8 NR (1/2), 101-2
PB Y (G) OUT 221-7 NR (1/2), 101-3
SEP C (X) OUT 211-20 CR (1/2), 212-20
SEP C (G) OUT 211-19 CR (1/2), 212-19
H:LINE/L:S OUT 211-21 CR (2/2), 212-21
D0 PULSE (2) OUT 221-1 NR (1/2), 101-9
D0 PULSE OUT 211-22 CR (2/2), 212-22
H:CNR CONNECTED OUT 211-25 CR (1/2), 212-25
H:NT/L:PAL OUT 211-26 CR (2/2), 212-26
RF SW PULSE OUT 211-14 CR (1/2), 212-14
RF SW PULSE OUT 221-3 NR (1/2), 101-7
RF SW PULSE OUT 202-1 RP, 802-7
RF SW PULSE IN 203-3 SS (1/5), 131-8
H:NT/L:PAL IN 203-1 SS (1/5), 131-10
L:CNR CONNECTED IN 221-4 NR (1/2), 101-6
C ROT IN 202-2 RP, 802-6
C ROT OUT 211-15 CR (1/2), 212-15
C ROT OUT 221-2 NR (1/2), 101-8
S-C VIDEO 3/3
D10 1S2837
Q17 DTA144EK INVERTER
5V
9V
9V-3
Q19 DTA144EK
Q22 DTC144EK
Q21 DTC144EK
Q20 DTC144EK
Q314 DTC144EK
MODE CONTROL SWITCH

VO-37C (2/3)

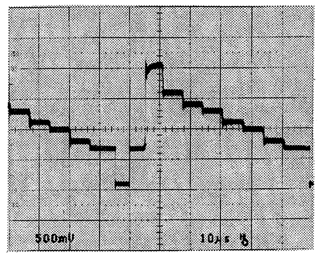
1-641-585-12 (1)
SVP-9020

VO-37C (3/3); Y/C MIX, VIDEO/S-VIDEO OUTPUT
DUS-592; N-VHS SIGNAL FILTER

① TP491 (H-1＊) PB mode



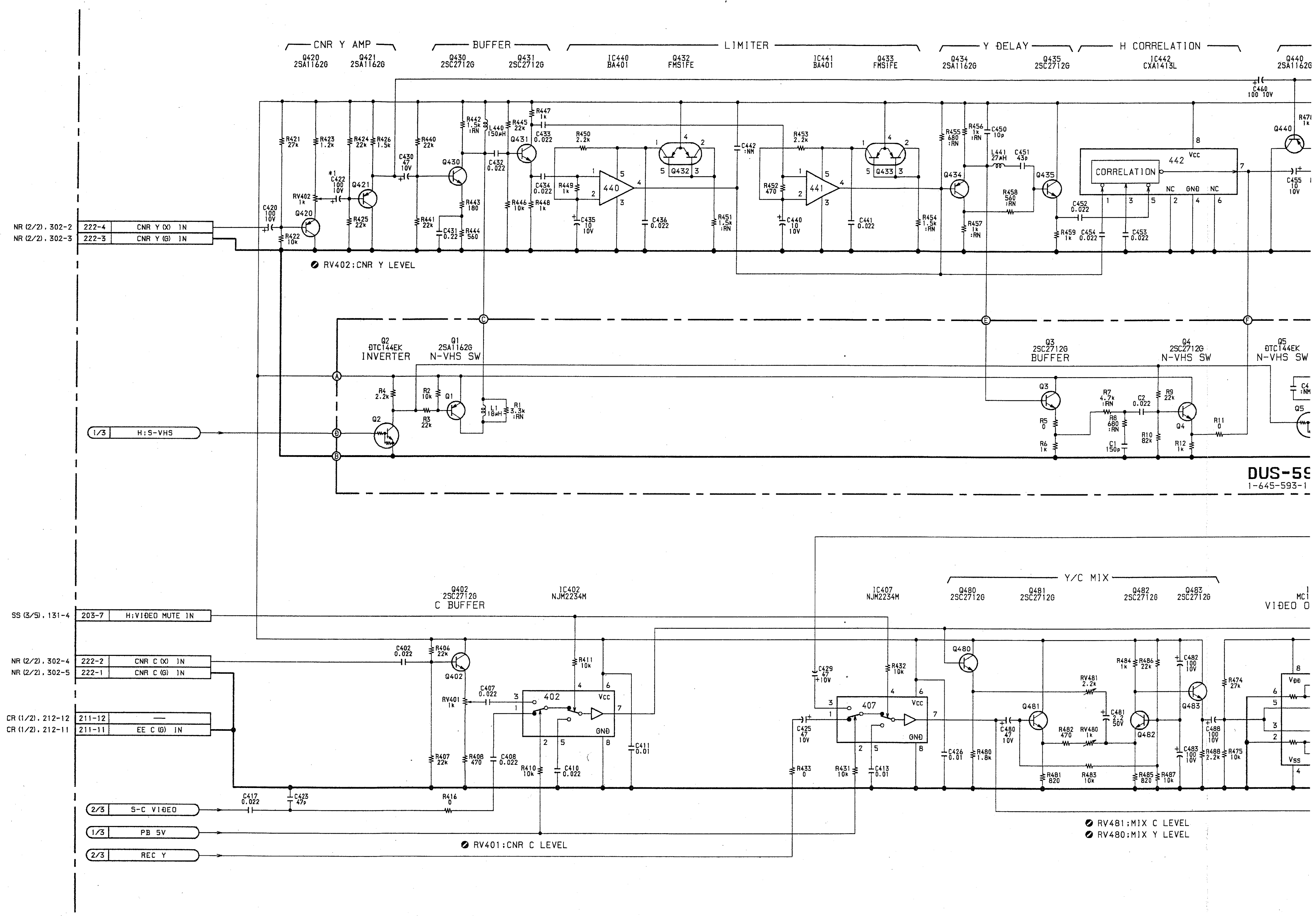
② TP492 (G-1＊) PB mode

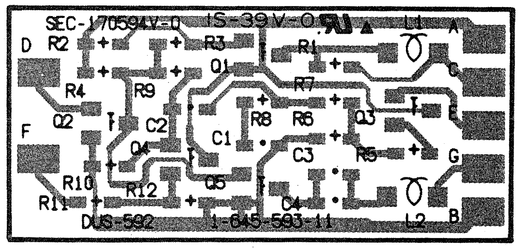


Measurement Condition

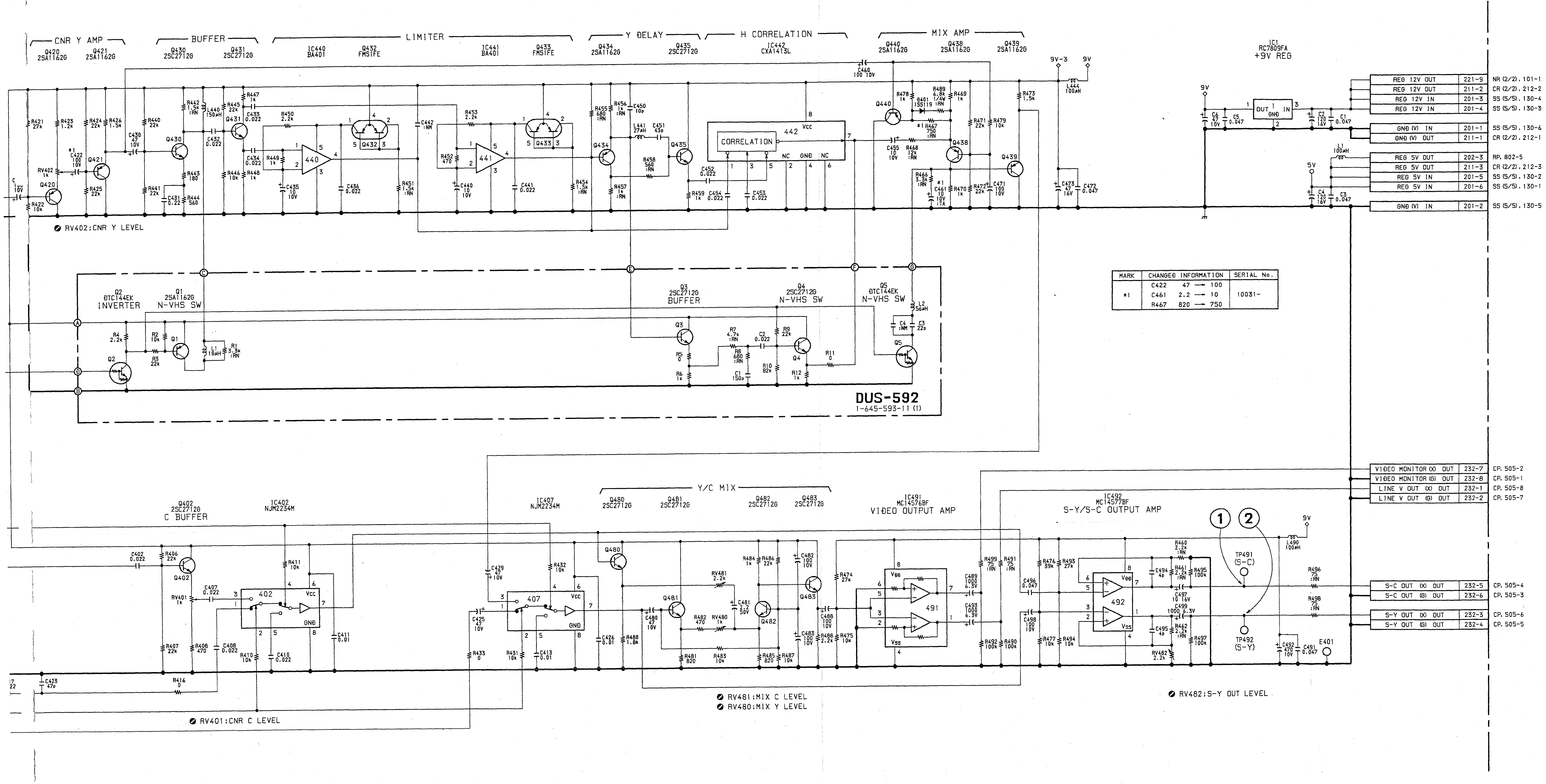
PB mode: KRV-45HPS

＊ mark; B SIDE mount


CNR Y AMP
Q420 2SA1162G
Q421 2SA1162G
BUFFER
Q430 2SC2712G
Q431 2SC2712G
LIMITER
IC440 BA401
Q432 FMS1FE
IC441 BA401
Q433 FMS1FE
Y DELAY
Q434 2SA1162G
Q435 2SC2712G
H CORRELATION
IC442 CXA1413L
CORRELATION
Q440 2SA1162G
RV402:CNR Y LEVEL
NR (2/2), 302-2
NR (2/2), 302-3
222-4 CNR Y (X) IN
222-3 CNR Y (G) IN
Q2 DTC144EK INVERTER
Q1 2SA1162G N-VHS SW
Q3 2SC2712G BUFFER
Q4 2SC2712G N-VHS SW
Q5 DTC144EK N-VHS SW
1/3 H:S-VHS
DUS-59
1-645-593-1
SS (3/5), 131-4
203-7 H:VIDEO MUTE IN
Q402 2SC2712G C BUFFER
IC402 NJM2234M
IC407 NJM2234M
Y/C MIX
Q480 2SC2712G
Q481 2SC2712G
Q482 2SC2712G
Q483 2SC2712G
VIDEO O
NR (2/2), 302-4
NR (2/2), 302-5
222-2 CNR C (X) IN
222-1 CNR C (G) IN
CR (1/2), 212-12
CR (1/2), 212-11
211-12
211-11 EE C (G) IN
2/3 S-C VIDEO
1/3 PB 5V
2/3 REC Y
RV401:CNR C LEVEL
RV481:MIX C LEVEL
RV480:MIX Y LEVEL


SEC-170594V-0
IS-39V-0
D
R2
R3
R1
L1
A
C
Q1
R4
R9
R7
F
Q2
C2
R8
R6
Q3
E
C1
Q4
C3
R5
G
R10
R12
Q5
C4
R11
DUS-592
1-645-593-11
L2
B

DUS-592 — A SIDE —
1-645-593-11 (1)
SVP-9020

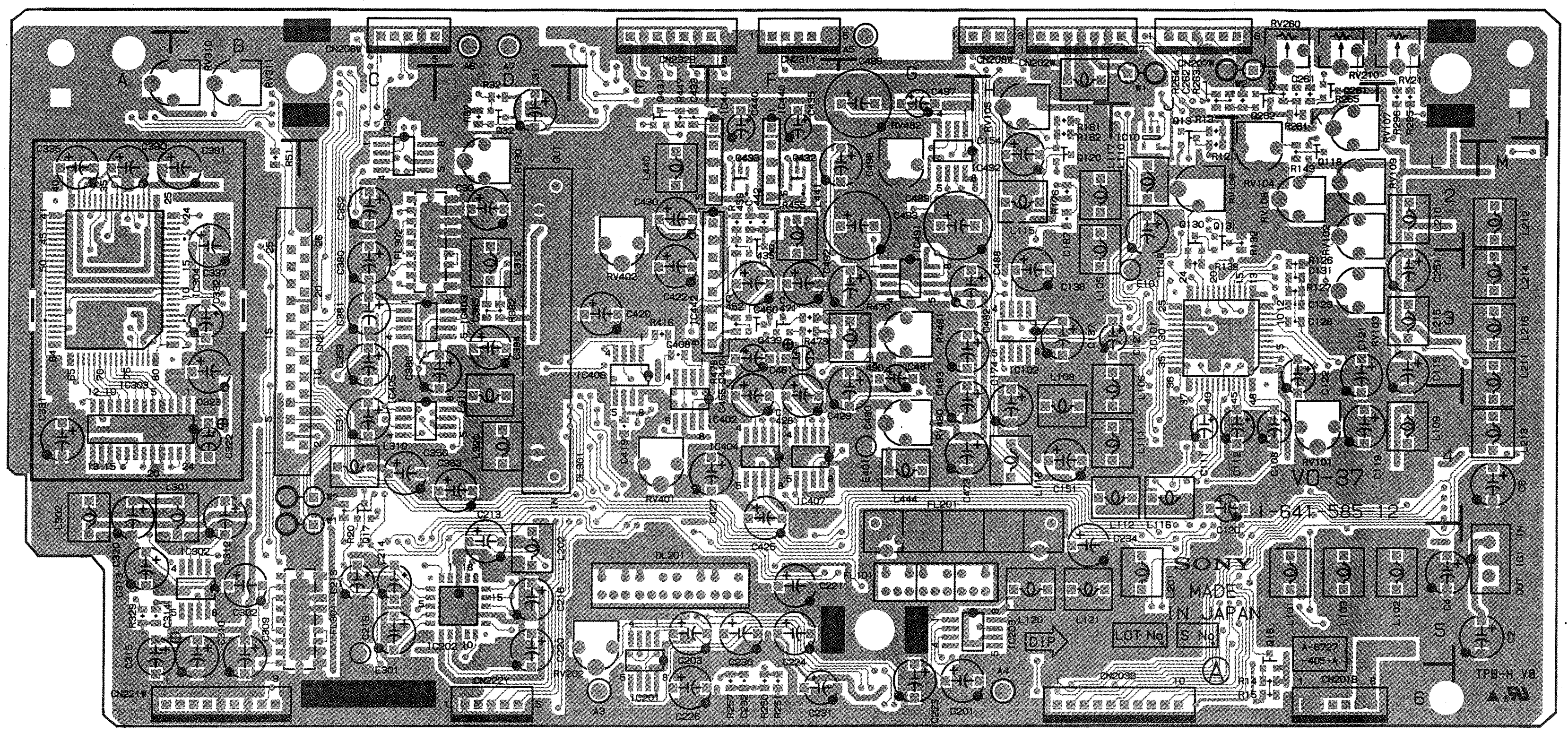

CNR Y AMP
Q420 2SA1162G
Q421 2SA1162G
BUFFER
Q430 2SC2712G
Q431 2SC2712G
LIMITER
IC440 BA401
Q432 FMS1FE
IC441 BA401
Q433 FMS1FE
Y DELAY
Q434 2SA1162G
Q435 2SC2712G
H CORRELATION
IC442 CXA1413L
CORRELATION
MIX AMP
Q440 2SA1162G
Q438 2SA1162G
Q439 2SA1162G
IC1 RC7809FA +9V REG
RV402:CNR Y LEVEL
Q2 DTC144EK INVERTER
Q1 2SA1162G N-VHS SW
Q3 2SC2712G BUFFER
Q4 2SC2712G N-VHS SW
Q5 DTC144EK N-VHS SW
DUS-592
1-645-593-11 (1)
Q402 2SC2712G C BUFFER
IC402 NJM2234M
IC407 NJM2234M
Y/C MIX
Q480 2SC2712G
Q481 2SC2712G
Q482 2SC2712G
Q483 2SC2712G
IC491 MC14576BF VIDEO OUTPUT AMP
IC492 MC14577BF S-Y/S-C OUTPUT AMP
TP491 (S-C)
TP492 (S-Y)
RV401:CNR C LEVEL
RV481:MIX C LEVEL
RV480:MIX Y LEVEL
RV482:S-Y OUT LEVEL
REG 12V OUT 221-9 NR (2/2), 101-1
REG 12V OUT 211-2 CR (2/2), 212-2
REG 12V IN 201-3 SS (5/5), 130-4
REG 12V IN 201-4 SS (5/5), 130-3
GND (V) IN 201-1 SS (5/5), 130-6
GND (V) OUT 211-1 CR (2/2), 212-1
REG 5V OUT 202-3 RP, 802-5
REG 5V OUT 211-3 CR (2/2), 212-3
REG 5V IN 201-5 SS (5/5), 130-2
REG 5V IN 201-6 SS (5/5), 130-1
GND (V) IN 201-2 SS (5/5), 130-5
VIDEO MONITOR (X) OUT 232-7 CP, 505-2
VIDEO MONITOR (G) OUT 232-8 CP, 505-1
LINE V OUT (X) OUT 232-1 CP, 505-8
LINE V OUT (G) OUT 232-2 CP, 505-7
S-C OUT (X) OUT 232-5 CP, 505-4
S-C OUT (G) OUT 232-6 CP, 505-3
S-Y OUT (X) OUT 232-3 CP, 505-6
S-Y OUT (G) OUT 232-4 CP, 505-5
①
②

MARK	CHANGED INFORMATION	SERIAL No.
*1	C422 47 → 100 C461 2.2 → 10 R467 820 → 750	10031-

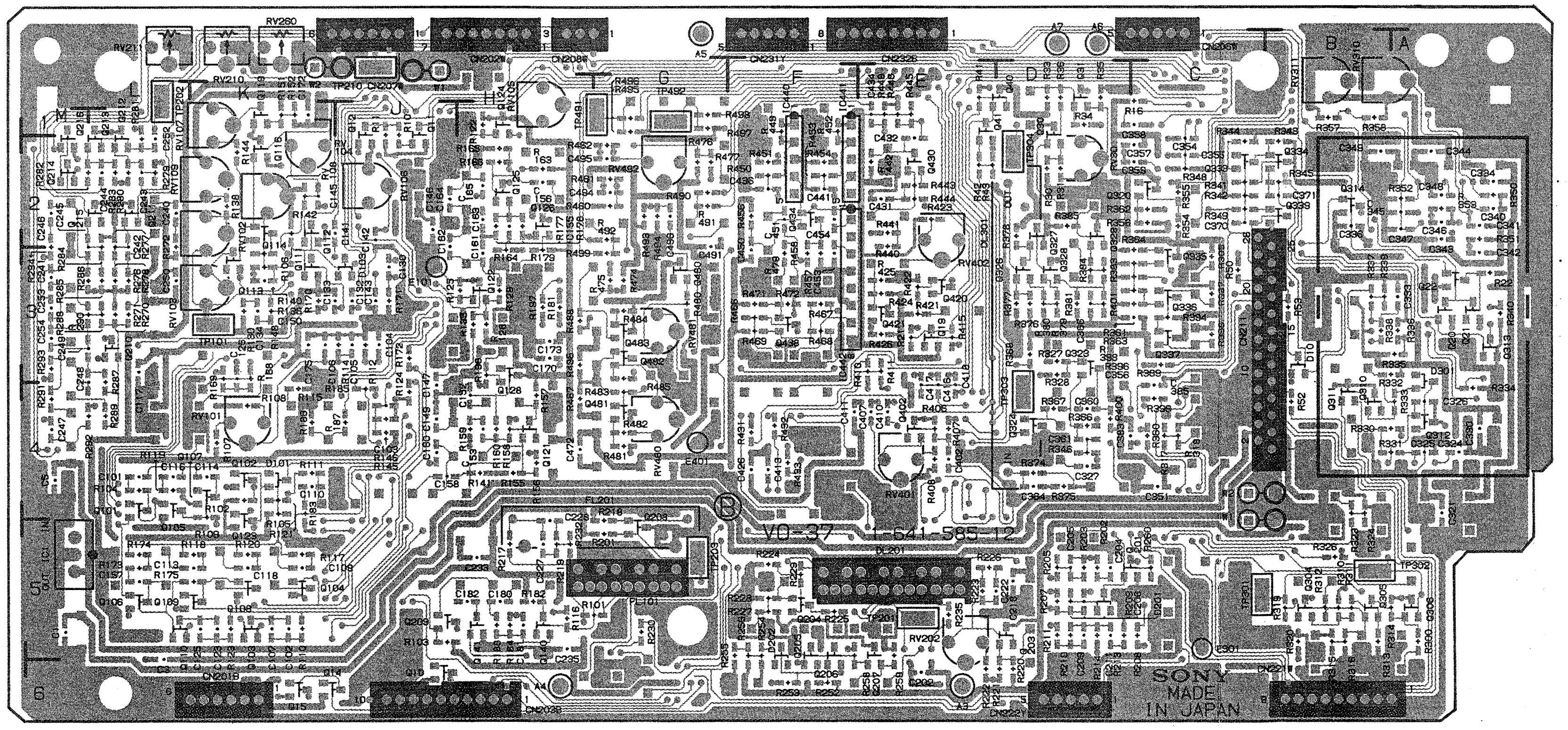
VO-37C (3/3)

1-641-585-12 (1)
SVP-9020

VO-37C ; Y/C VIDEO PROCESS



VO-37C – A SIDE –
1-641-585-12 (1)
SVP-9020



VO-37C – B SIDE –
1-641-585-12 (1)
SVP-9020

VO-37C (1-641-585-12)

CN201	K-6
CN202	H-1
CN203	H-6
CN206	C-1
CN208	H-1
CN211	C-3
CN221	B-6
CN222	D-6
CN231	F-1
CN232	E-1
DL201	E-5
DL301	E-4
D10	B-3 *
D101	K-4 *
D103	J-3 *
D130	B-1 *
D201	C-5 *
D202	F-5 *
D301	A-3 *
D401	F-3 *
E101	J-3
E301	C-6
E401	G-4
FL101	G-5
FL201	G-4
FL301	C-5
FL302	C-3
IC1	M-5
IC10	J-1
IC101	J-3
IC102	H-3
IC201	E-6
IC202	D-5
IC203	H-5
IC302	B-5
IC303	A-4
IC304	B-3
IC306	C-1
IC402	F-4
IC403	D-3
IC404	F-4
IC405	C-4
IC406	E-3
IC407	F-4
IC440	F-1
IC441	F-1
IC442	E-3
IC491	G-3
IC492	G-2
Q10	J-6 *
Q11	J-1 *
Q12	J-1 *
Q13	J-1
Q17	C-5
Q19	E-3 *
Q20	A-3 *
Q21	A-3 *
Q22	A-3 *
Q30	D-1 *
Q31	D-1 *
Q32	D-1
Q40	D-1 *
Q41	D-1 *
Q101	L-4 *
Q102	K-4 *
Q103	K-6 *
Q104	K-5 *
Q105	L-5 *
Q106	L-5 *
Q107	L-4 *
Q108	K-5 *
Q109	L-5 *
Q110	L-6 *
Q111	K-3 *
Q112	K-2 *
Q120	H-2
Q121	H-4 *
Q122	H-3 *
Q123	K-5 *
Q124	H-1 *
Q125	H-2 *
Q126	H-2 *
Q128	H-3 *
Q130	J-2
Q131	J-2
Q140	H-5 *
Q141	H-5 *
Q201	D-5 *
Q203	D-5 *
Q204	F-5 *
Q205	F-5 *
Q206	F-6 *
Q207	E-6 *
Q208	G-4 *
Q209	J-5 *
Q304	B-5 *
Q305	B-5 *
Q306	A-5 *
Q310	B-4 *
Q311	B-4 *
Q312	A-4 *
Q313	A-3 *
Q314	B-2 *
Q320	D-2 *
Q323	D-3 *
Q324	D-4 *
Q326	D-3 *
Q327	D-2 *
Q328	D-3 *
Q329	D-2 *
Q333	C-3 *
Q334	B-2 *
Q335	C-3 *
Q336	C-3 *
Q337	C-3 *
Q339	B-2 *
Q402	E-4 *
Q420	E-3 *
Q421	E-3 *
Q430	E-2 *
Q431	E-1
Q432	F-2
Q433	F-2
Q434	F-2 *
Q435	F-2
Q438	F-3 *
Q439	F-3
Q440	F-3
Q480	G-3 *
Q481	H-4 *
Q482	G-3 *
Q483	G-3 *
RV30	D-2
RV101	K-4
RV105	H-1
RV106	J-2
RV202	D-6
RV310	B-1
RV401	E-4
RV402	E-3
RV480	G-4
RV481	G-3
RV482	G-1
TP201	E-5 *
TP203	G-5 *
TP301	C-5 *
TP302	A-5 *
TP303	D-3 *
TP304	D-2 *
TP491	H-1 *
TP492	G-1 *

* mark ; B SIDE mount

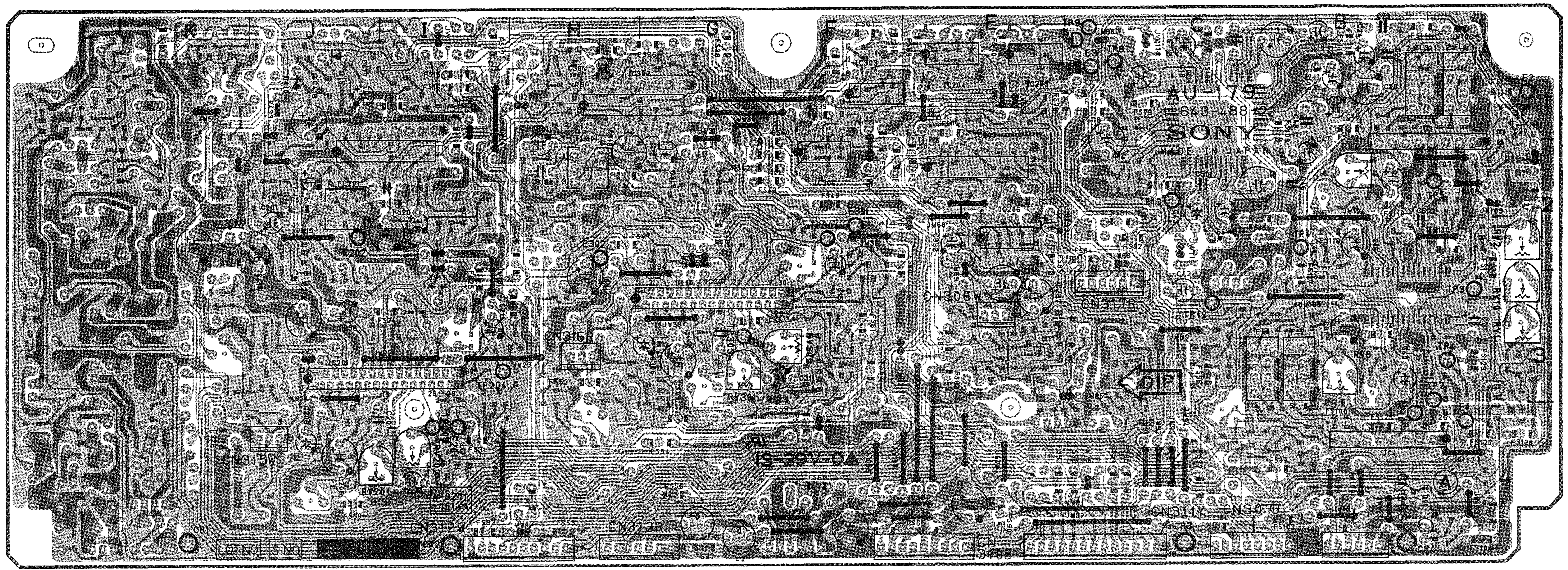
AU-179C; AFM PROCESS/NORMAL AUDIO PROCESS

Serial No. 10681 and higher

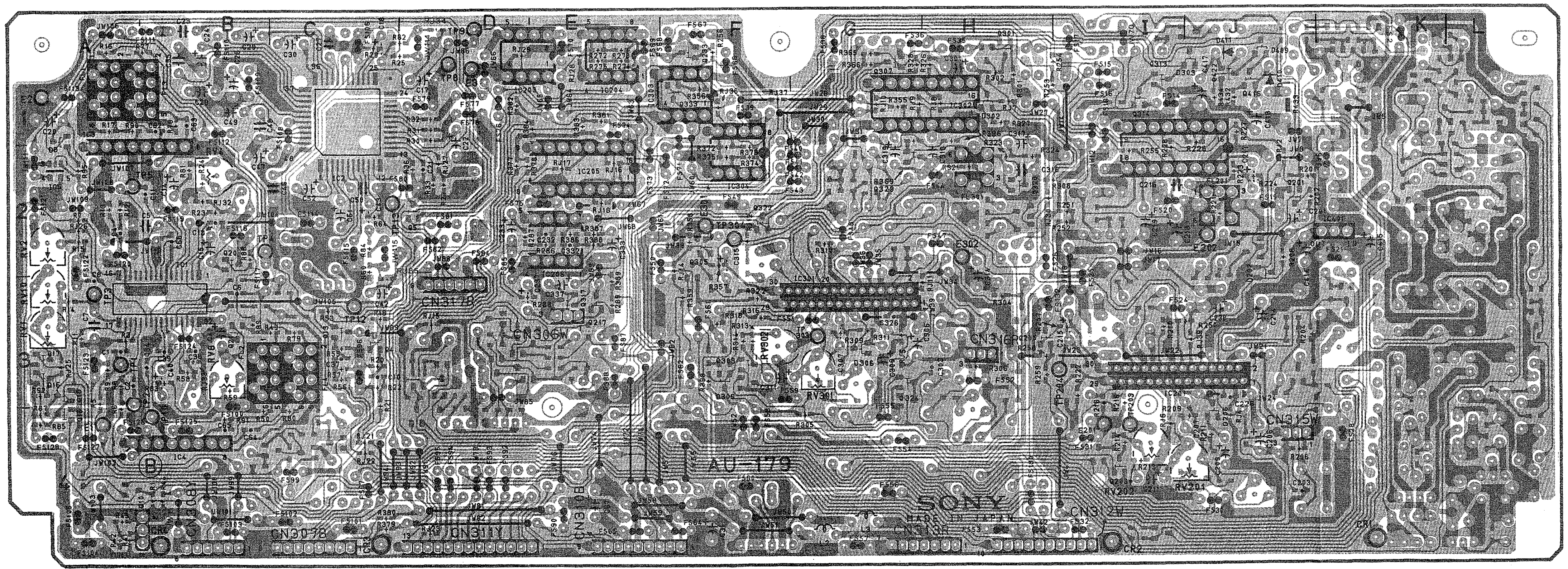
AU-179C (1-643-488-23)

CN306	E-3
CN307	C-4
CN308	B-4
CN310	E-4
CN311	D-4
CN312	I-4
CN313	H-4
CN315	K-4
CN316	H-3
CN317	D-3
CR1	K-4
CR2	I-4
CR3	C-4
D8	A-2 *
D202	J-2 *
D206	J-4 *
D302	H-1 *
D303	I-1 *
D306	G-3 *
D309	F-3 *
D409	J-1 *
D410	J-1
D411	J-1
E1	A-4
E2	A-1
E3	D-1
E201	I-4
E202	J-2
E301	F-2
E302	H-2
FL1	A-1
FL2	C-3
FL3	B-1
FL4	C-3
FL201	J-2
FL301	H-1
IC1	B-2 *
IC2	C-2 *
IC3	B-1
IC4	B-4
IC5	A-2 *
IC201	J-3
IC202	I-1
IC203	E-1
IC204	E-1
IC205	E-1
IC206	E-2
IC301	G-3
IC302	H-1
IC303	F-1
IC304	F-2
IC401	K-2
Q4	C-3 *
Q5	D-2 *
Q10	B-4
Q13	C-3 *
Q15	A-4 *
Q16	A-3 *
Q17	A-3 *
Q18	A-3 *
Q20	B-2 *
Q21	B-3 *
Q201	J-2 *
Q203	I-4 *
Q205	H-3 *
Q217	E-3 *
Q219	H-4 *
Q301	H-1 *
Q303	F-3 *
Q305	F-2 *
Q307	G-1 *
Q313	I-1 *
Q314	I-1 *
Q317	E-3 *
Q319	E-3 *
Q320	H-2 *
Q322	F-2 *
Q324	G-3 *
Q329	G-2 *
Q416	J-1 *
Q422	J-1 *
RV1	A-3
RV2	A-2
RV4	B-2
RV8	B-3
RV10	A-3
RV201	J-4
RV202	I-4
RV301	G-3
RV302	F-3
TP1	A-3
TP2	A-3
TP3	A-3
TP4	B-2
TP5	A-2
TP8	D-1
TP9	D-1
TP10	B-4
TP12	C-3
TP13	D-2
TP203	I-4
TP204	I-3
TP303	G-3
TP304	F-2

* mark ; B SIDE mount

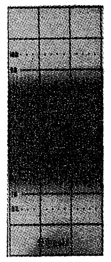

K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
AU-179
1-643-488-23
SONY
MADE IN JAPAN
CN315W
CN316R
CN306W
CN317B
CN312W
CN313R
CN311
CN307B
CN308
CN310B
RV201
RV301
DIP
IS-39V-0A

AU-179C — A SIDE —
1-643-488-23 (1)
SVP-9020

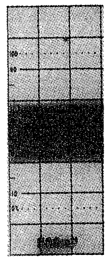

A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
AU-179
SONY
MADE IN JAPAN
CN317B
CN306W
CN316R
CN315W
CN312W
CN313R
CN311
CN307B
CN310B
RV301
RV201

AU-179C — B SIDE —
1-643-488-23 (1)
SVP-9020

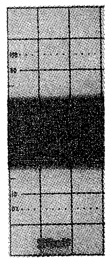
① TP1 (A



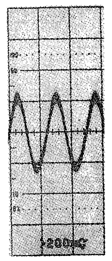
② TP4 (B



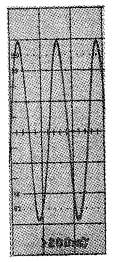
③ TP5 (A

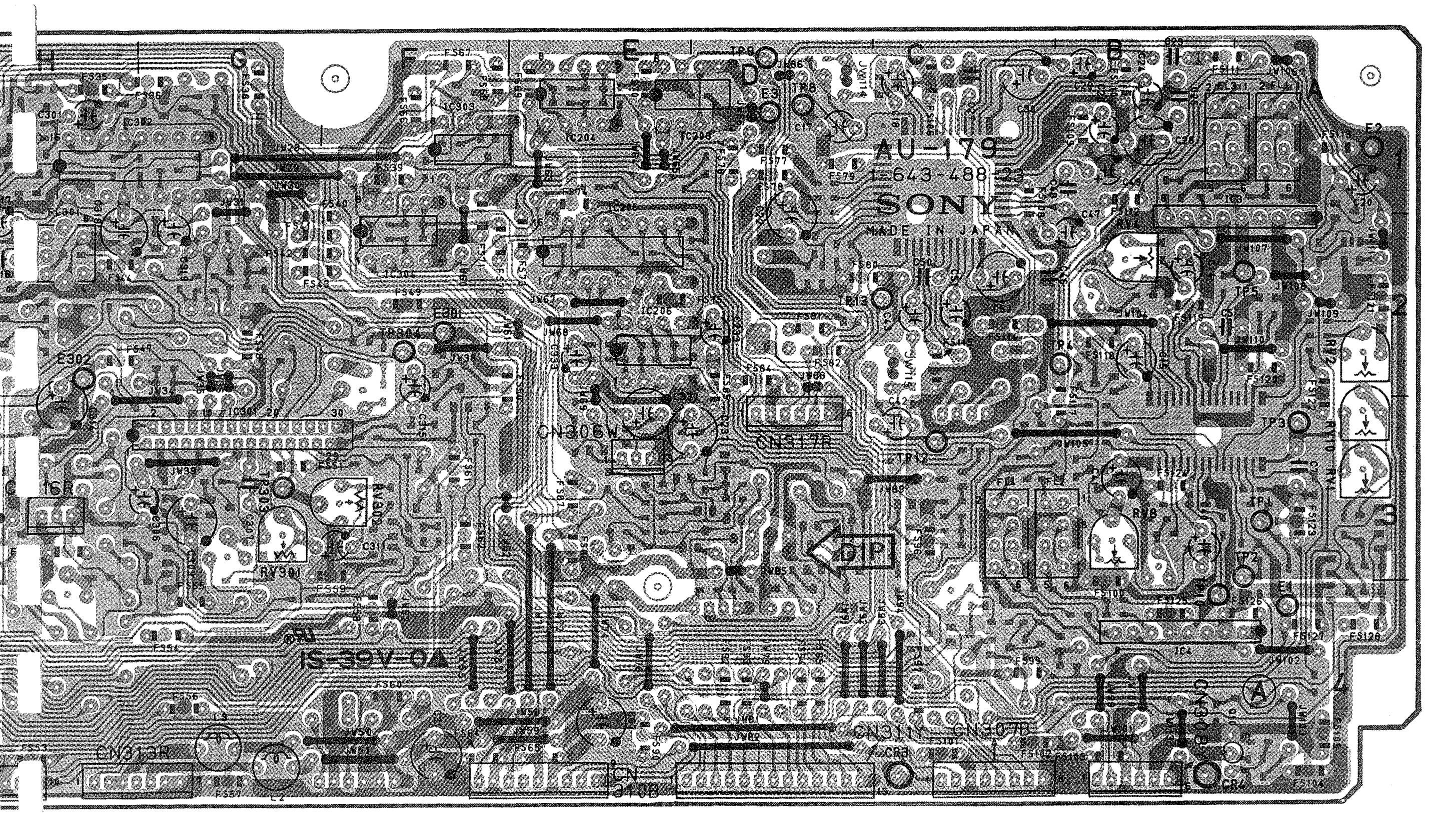


④ TP8 (D

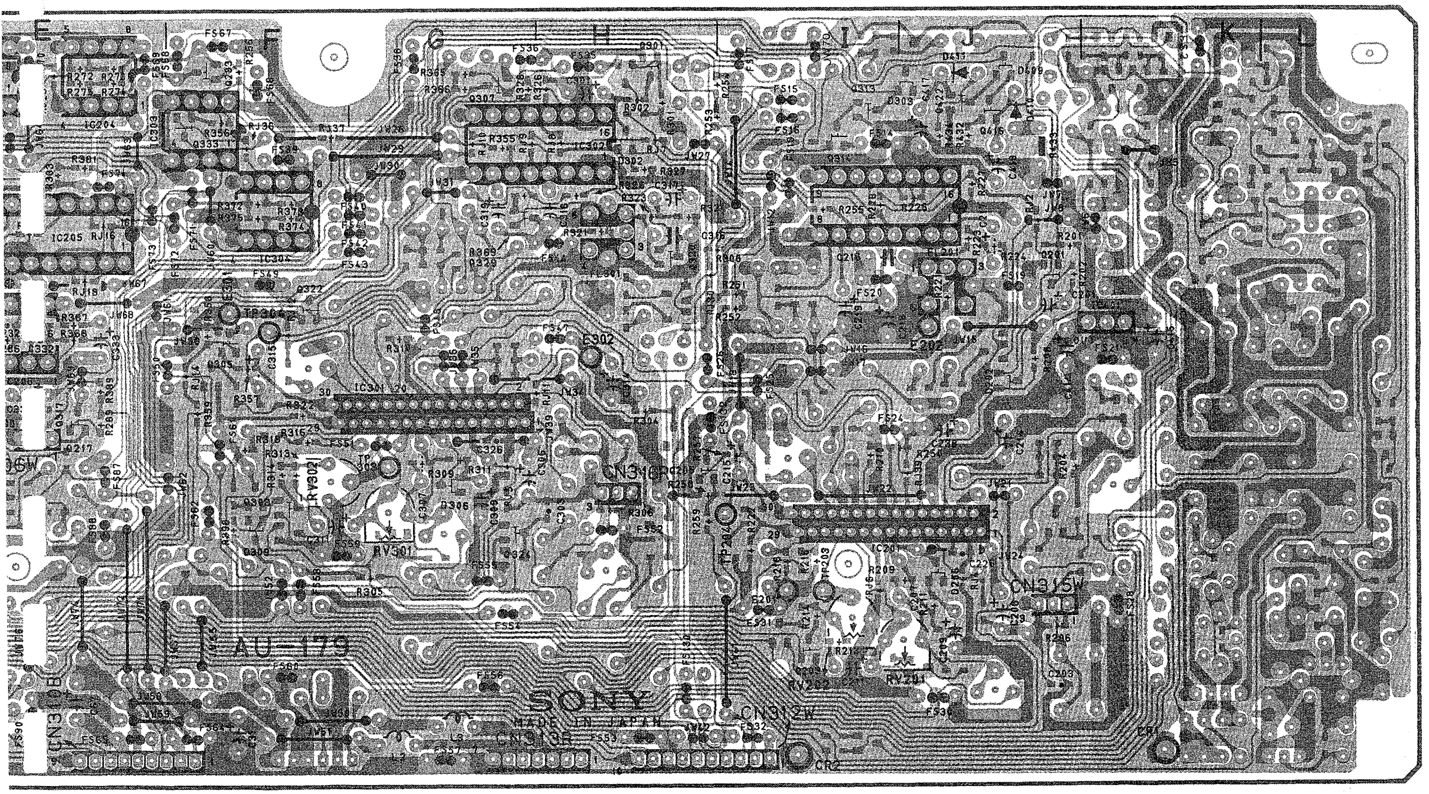


⑤ TP9 (D



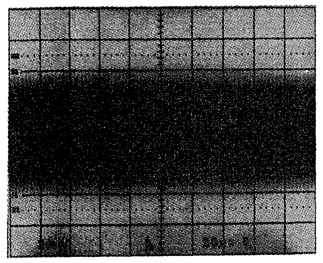

AU-179
1-643-488-23
SONY
MADE IN JAPAN
CN306W
CN317B
IS-39V-0A
CN311Y
CN307B
CN313R
CN310B
TP3
RV301

AU-179C – A SIDE –
1-643-488-23 (1)
SVP-9020

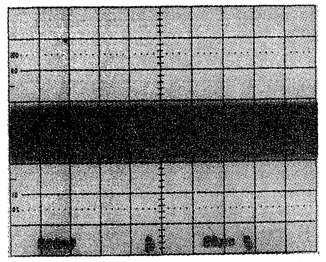

AU-179
SONY
MADE IN JAPAN
CN316R
CN315W
CN313B
CN312W
CN319R
IC301
RV501
RV202
RV201

AU-179C – B SIDE –
1-643-488-23 (1)
SVP-9020

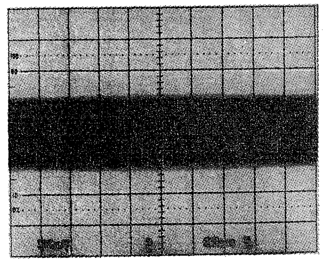
① TP1 (A-3) PB mode



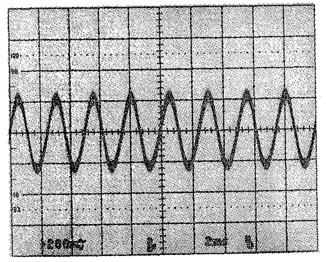
② TP4 (B-2) PB mode



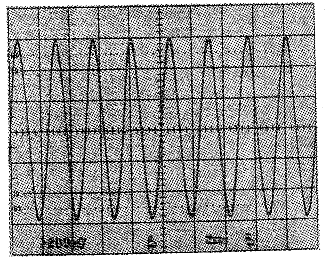
③ TP5 (A-2) PB mode



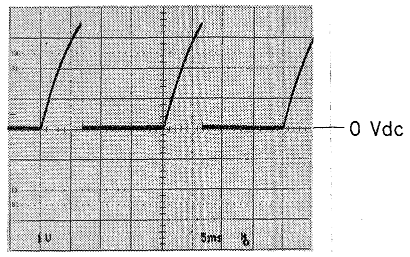
④ TP8 (D-1) PB mode



⑤ TP9 (D-1) PB mode



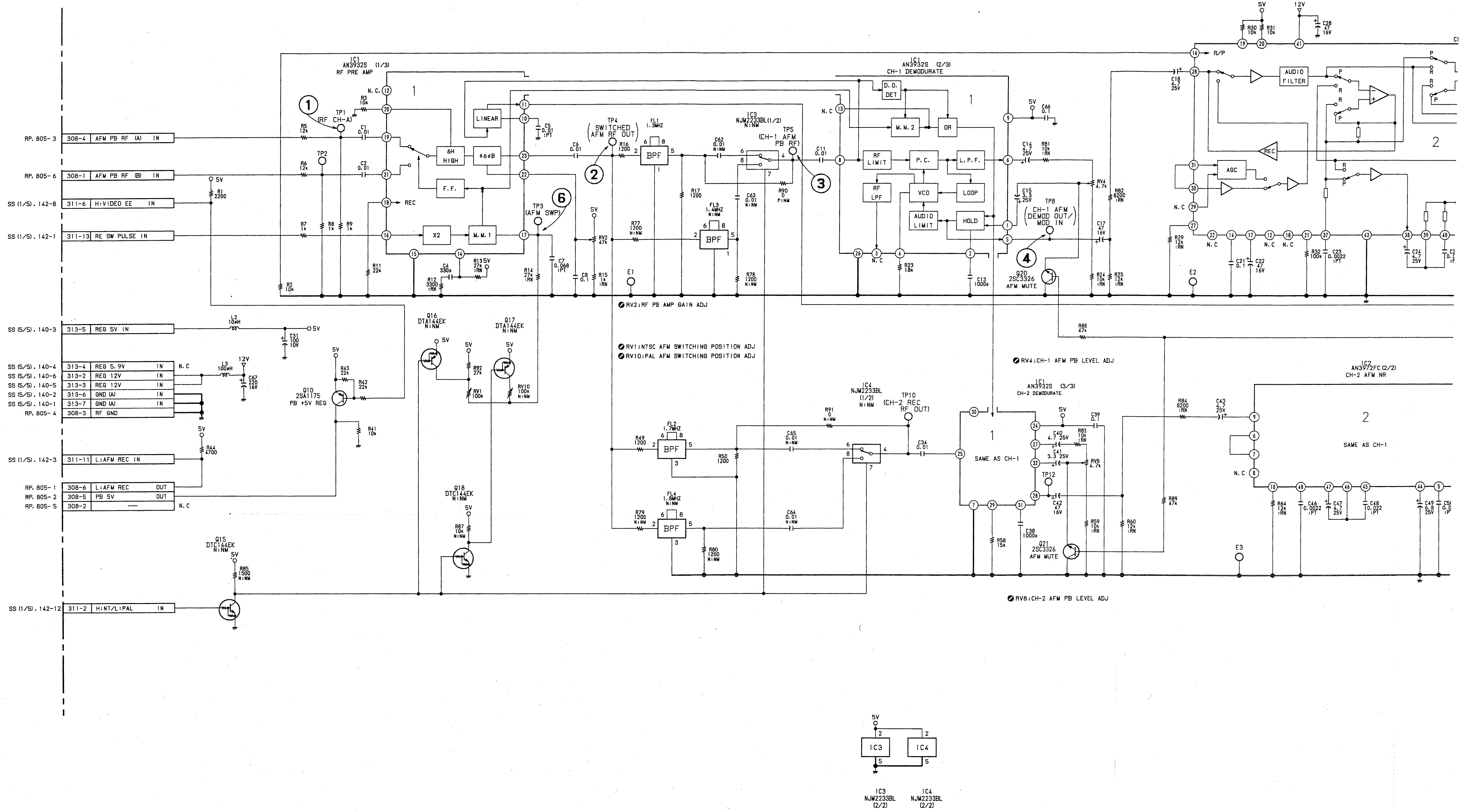
⑥ TP3 (A-3) PB mode

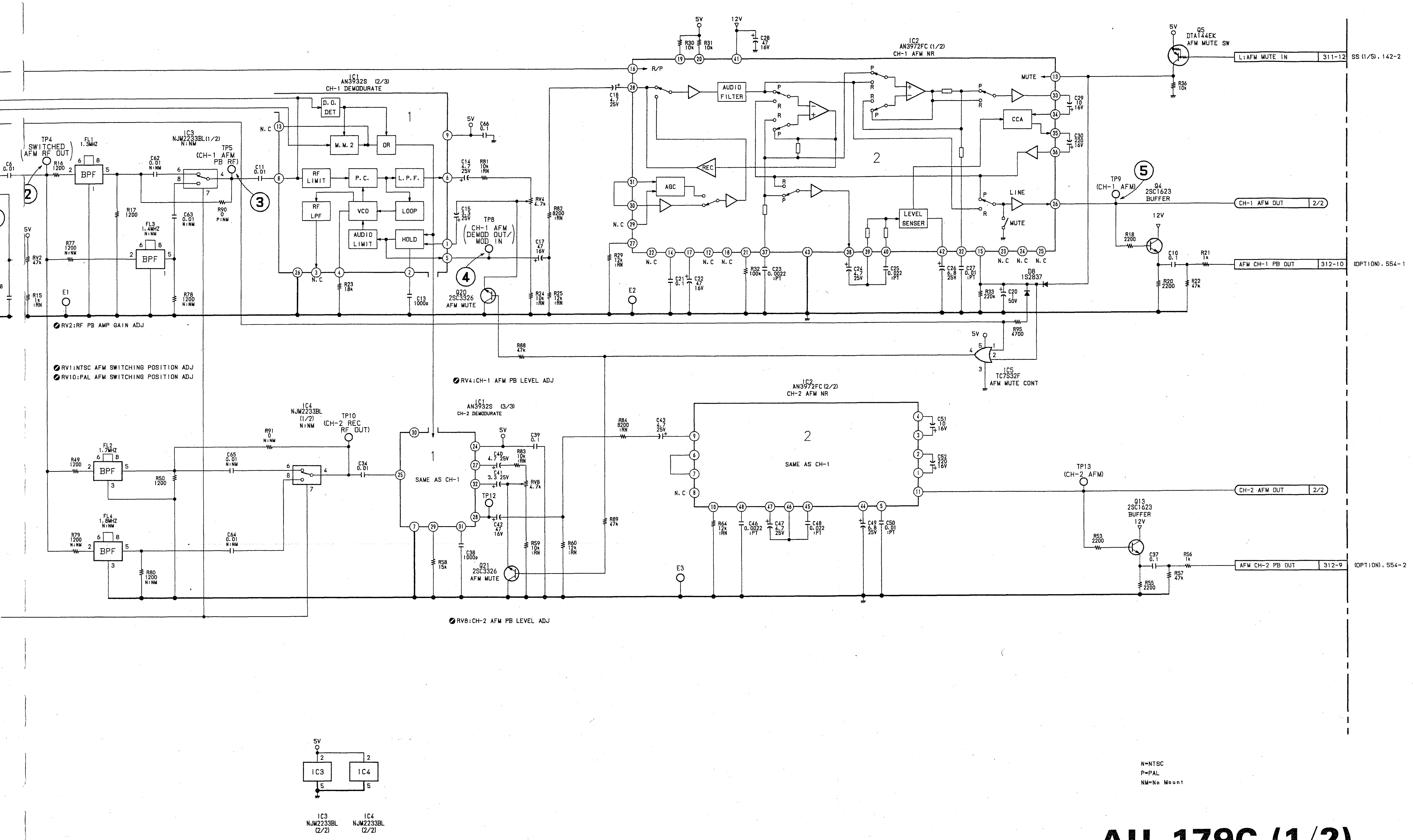


Measurement Condition
PB mode: KRV-45HPS (Hi-Fi)

AU-179C (1/2); AFM PROCESS

Serial No. 10681 and higher


IC1 AN3932S (1/3) RF PRE AMP
IC1 AN3932S (2/3) CH-1 DEMODURATE
IC1 AN3932S (3/3) CH-2 DEMODURATE
IC2 AN3972FC (2/2) CH-2 AFM NR
IC3 NJM2233BL (1/2) N:NM
IC4 NJM2233BL (1/2) N:NM
① (RF CH-A) TP1
TP2
② TP4 (SWITCHED AFM RF OUT)
③ TP5 (CH-1 AFM PB RF)
④ TP8 (CH-1 AFM DEMOD OUT/MOD IN)
⑥ TP3 (AFM SWP)
TP10 (CH-2 REC RF OUT)
TP12
LINEAR
6H HIGH
±6dB
F.F.
X2
M.M.1
M.M.2
D.O. DET
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
AUDIO FILTER
AGC
REC
BPF
FL1 1.3MHZ
FL2 1.7MHZ
FL3 1.4MHZ
FL4 1.8MHZ
SAME AS CH-1
R/P
REC
N.C
E1
E2
E3
RP.805-3 308-4 AFM PB RF (A) IN
RP.805-6 308-1 AFM PB RF (B) IN
SS(1/5).142-8 311-6 H:VIDEO EE IN
SS(1/5).142-1 311-13 RE SW PULSE IN
SS(5/5).140-3 313-5 REG 5V IN
SS(5/5).140-4 313-4 REG 5.9V IN
SS(5/5).140-6 313-2 REG 12V IN
SS(5/5).140-5 313-3 REG 12V IN
SS(5/5).140-2 313-6 GND (A) IN
SS(5/5).140-1 313-7 GND (A) IN
RP.805-4 308-3 RF GND
SS(1/5).142-3 311-11 L:AFM REC IN
RP.805-1 308-6 L:AFM REC OUT
RP.805-2 308-5 PB 5V OUT
RP.805-5 308-2 —
SS(1/5).142-12 311-2 H:NT/L:PAL IN
Q10 2SA1175 PB +5V REG
Q15 DTC144EK N:NM
Q16 DTA144EK N:NM
Q17 DTA144EK N:NM
Q18 DTC144EK N:NM
Q20 2SC3326 AFM MUTE
Q21 2SC3326 AFM MUTE
RV1 100k
RV2 47k
RV4 4.7k
RV8 4.7k
RV10 100k N:NM
RV2:RF PB AMP GAIN ADJ
RV1:NTSC AFM SWITCHING POSITION ADJ
RV10:PAL AFM SWITCHING POSITION ADJ
RV4:CH-1 AFM PB LEVEL ADJ
RV8:CH-2 AFM PB LEVEL ADJ
L2 10μH
L3 100μH
5V
12V
IC3 NJM2233BL (2/2)
IC4 NJM2233BL (2/2)


IC1
AN3932S (2/3)
CH-1 DEMODURATE
D.O. DET
M.M.2
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
IC2
AN3972FC (1/2)
CH-1 AFM NR
AUDIO FILTER
REC
AGC
CCA
LINE
MUTE
LEVEL SENSER
IC3
NJM2233BL(1/2)
N:NM
TP4
SWITCHED
AFM RF OUT
TP5
CH-1 AFM PB RF
FL1 1.5MHZ
BPF
FL3 1.4MHZ N:NM
TP8
CH-1 AFM DEMOD OUT/ MOD IN
Q20 2SC3326 AFM MUTE
Q5 DTA144EK AFM MUTE SW
L:AFM MUTE IN
311-12
SS(1/5), 142-2
TP9 (CH-1 AFM)
Q4 2SC1623 BUFFER
CH-1 AFM OUT
2/2
AFM CH-1 PB OUT
312-10
(OPTION), 554-1
D8 1S2837
IC5 TC7S32F AFM MUTE CONT
RV2:RF PB AMP GAIN ADJ
RV1:NTSC AFM SWITCHING POSITION ADJ
RV10:PAL AFM SWITCHING POSITION ADJ
RV4:CH-1 AFM PB LEVEL ADJ
IC4
NJM2233BL (1/2) N:NM
TP10 (CH-2 REC RF OUT)
FL2 1.7MHZ
FL4 1.8MHZ N:NM
IC1
AN3932S (3/3)
CH-2 DEMODURATE
SAME AS CH-1
TP12
Q21 2SC3326 AFM MUTE
RV8:CH-2 AFM PB LEVEL ADJ
IC2
AN3972FC (2/2)
CH-2 AFM NR
SAME AS CH-1
TP13 (CH-2 AFM)
CH-2 AFM OUT
Q13 2SC1623 BUFFER
AFM CH-2 PB OUT
312-9
(OPTION), 554-2
E1
E2
E3
5V
12V
IC3 NJM2233BL (2/2)
IC4 NJM2233BL (2/2)
2
3
4
5

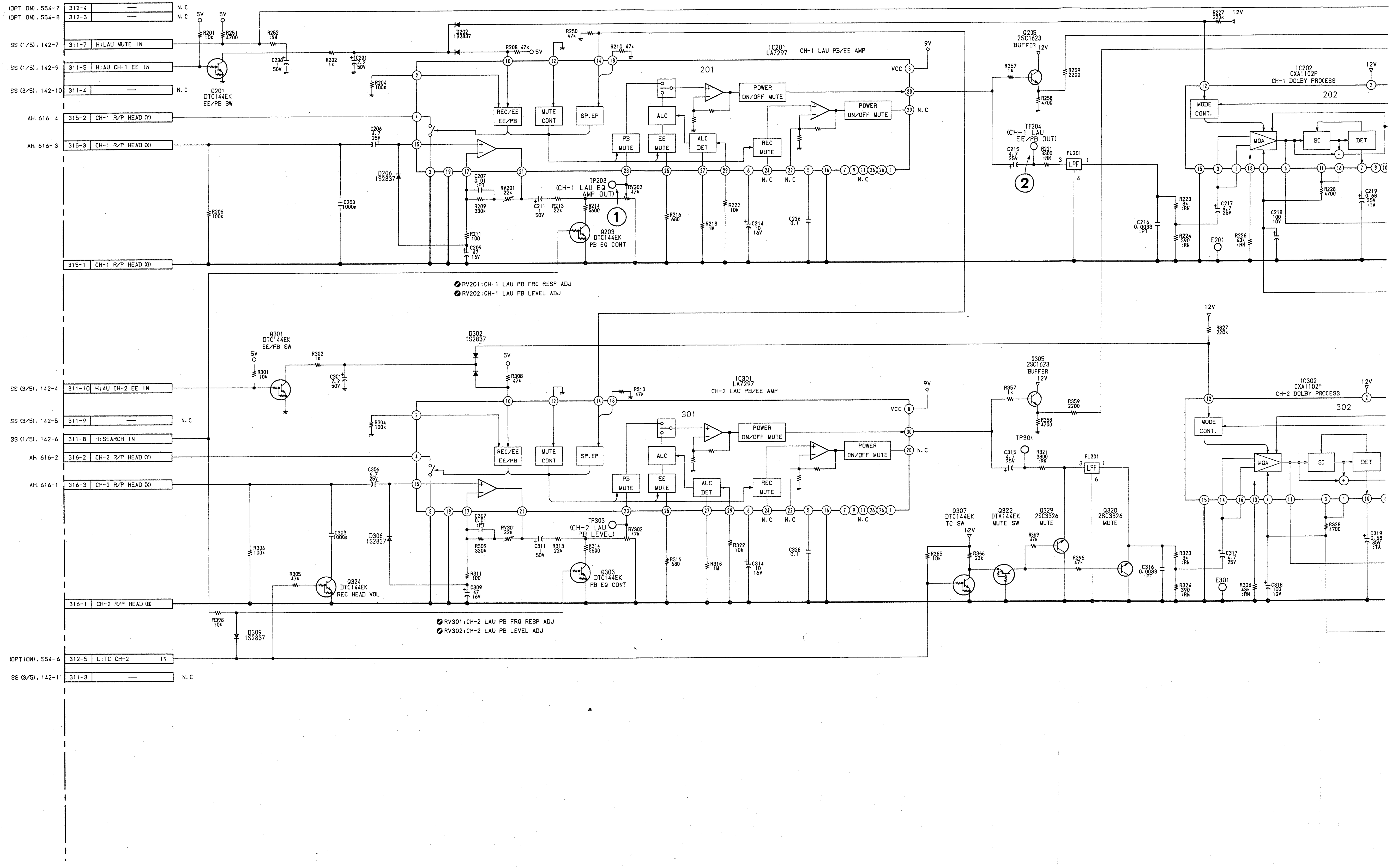
N=NTSC
P=PAL
NM=No Mount

AU-179C (1/2)

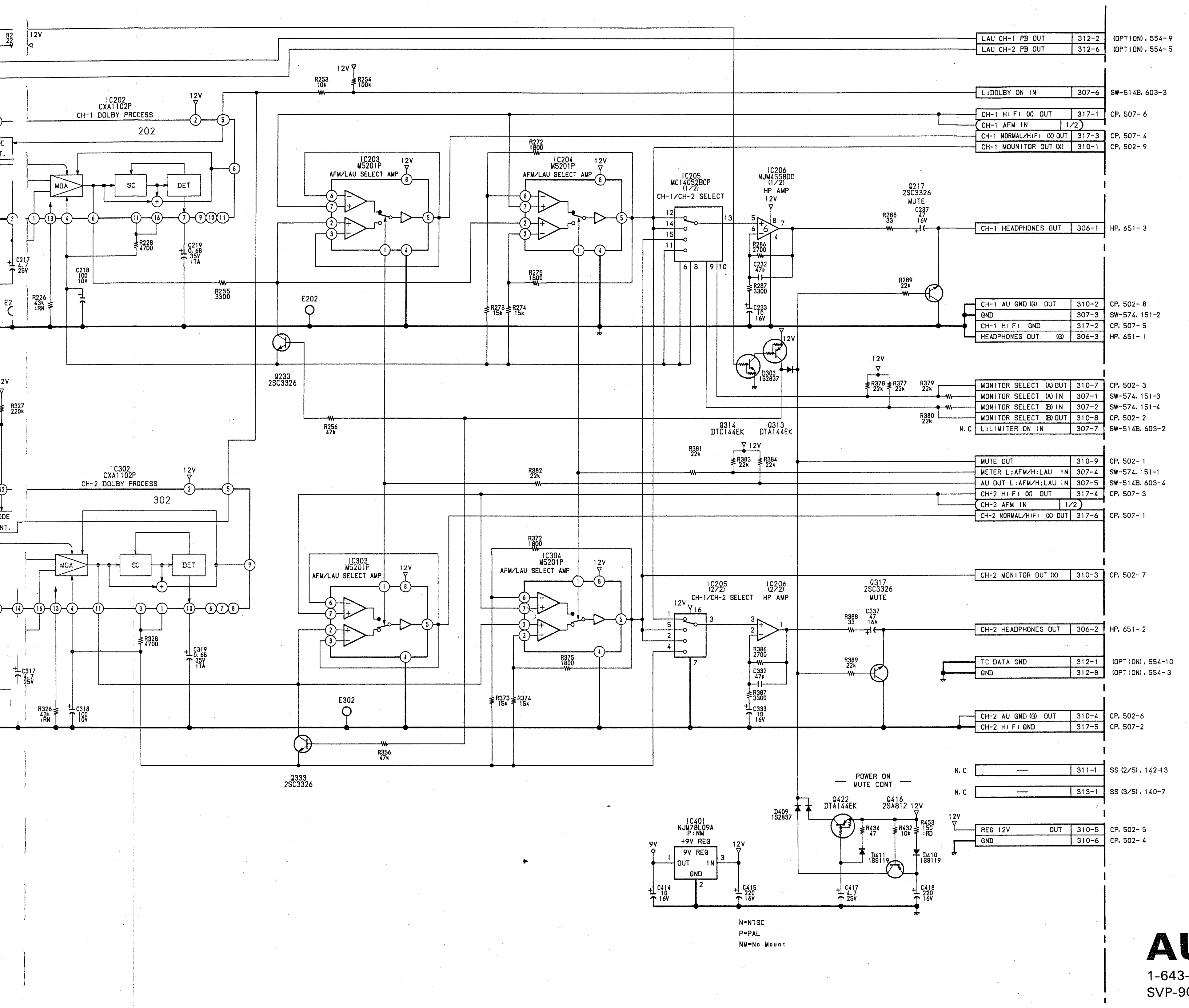
1-643-488-23 (1)
SVP-9020

AU-179C (2/2); NORMAL AUDIO PROCESS

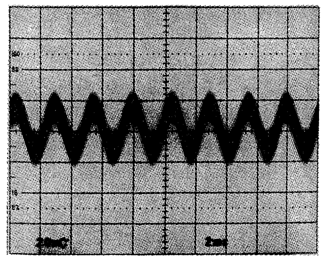
Serial No. 10681 and higher


(OPTION), 554-7 312-4 — N.C
(OPTION), 554-8 312-3 — N.C
SS (1/5), 142-7 311-7 H:LAU MUTE IN
SS (1/5), 142-9 311-5 H:AU CH-1 EE IN
SS (3/5), 142-10 311-4 N.C
AH, 616-4 315-2 CH-1 R/P HEAD (Y)
AH, 616-3 315-3 CH-1 R/P HEAD (X)
315-1 CH-1 R/P HEAD (G)
SS (3/5), 142-4 311-10 H:AU CH-2 EE IN
SS (3/5), 142-5 311-9 — N.C
SS (1/5), 142-6 311-8 H:SEARCH IN
AH, 616-2 316-2 CH-2 R/P HEAD (Y)
AH, 616-1 316-3 CH-2 R/P HEAD (X)
316-1 CH-2 R/P HEAD (G)
(OPTION), 554-6 312-5 L:TC CH-2 IN
SS (3/5), 142-11 311-3 — N.C
Q201 DTC144EK EE/PB SW
Q301 DTC144EK EE/PB SW
IC201 LA7297 CH-1 LAU PB/EE AMP
IC301 LA7297 CH-2 LAU PB/EE AMP
201
301
REC/EE EE/PB
MUTE CONT
SP.EP
PB MUTE
EE MUTE
ALC
ALC DET
REC MUTE
POWER ON/OFF MUTE
VCC
9V
5V
12V
N.C
TP203 (CH-1 LAU EQ AMP OUT)
TP303 (CH-2 LAU PB LEVEL)
①
②
Q203 DTC144EK PB EQ CONT
Q303 DTC144EK PB EQ CONT
Q324 DTC144EK REC HEAD VOL
D202 1S2837
D206 1S2837
D302 1S2837
D306 1S2837
D309 1S2837
Q205 2SC1623 BUFFER
Q305 2SC1623 BUFFER
TP204 (CH-1 LAU EE/PB OUT)
TP304
FL201 LPF
FL301 LPF
Q307 DTC144EK TC SW
Q322 DTA144EK MUTE SW
Q329 2SC3326 MUTE
Q320 2SC3326 MUTE
IC202 CXA1102P CH-1 DOLBY PROCESS
IC302 CXA1102P CH-2 DOLBY PROCESS
202
302
MODE CONT.
MOA
SC
DET
E201
E301
✓RV201:CH-1 LAU PB FRQ RESP ADJ
✓RV202:CH-1 LAU PB LEVEL ADJ
✓RV301:CH-2 LAU PB FRQ RESP ADJ
✓RV302:CH-2 LAU PB LEVEL ADJ

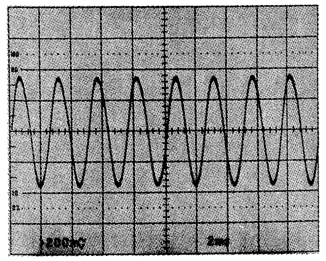
A | B | C | D | E | F | G | H


IC202 CXA1102P CH-1 DOLBY PROCESS
202
IC203 M5201P AFM/LAU SELECT AMP
IC204 M5201P AFM/LAU SELECT AMP
IC205 MC14052BCP (1/2) CH-1/CH-2 SELECT
IC206 NJM4558DD (1/2) HP AMP
Q217 2SC3326 MUTE
Q233 2SC3326
Q314 DTC144EK
Q313 DTA144EK
D303 1S2837
E202
IC302 CXA1102P CH-2 DOLBY PROCESS
302
IC303 M5201P AFM/LAU SELECT AMP
IC304 M5201P AFM/LAU SELECT AMP
IC205 (2/2) CH-1/CH-2 SELECT
IC206 (2/2) HP AMP
Q317 2SC3326 MUTE
Q333 2SC3326
E302
POWER ON MUTE CONT
Q422 DTA144EK
Q416 2SA812
D409 1S2837
D411 1SS119
D410 1SS119
IC401 NJM78L09A P:NM +9V REG
N=NTSC
P=PAL
NM=No Mount
LAU CH-1 PB OUT 312-2 (OPTION), 554-9
LAU CH-2 PB OUT 312-6 (OPTION), 554-5
L:DOLBY ON IN 307-6 SW-514B, 603-3
CH-1 HIFI (X) OUT 317-1 CP, 507-6
CH-1 AFM IN 1/2
CH-1 NORMAL/HIFI (X) OUT 317-3 CP, 507-4
CH-1 MOUNITOR OUT (X) 310-1 CP, 502-9
CH-1 HEADPHONES OUT 306-1 HP, 651-3
CH-1 AU GND (G) OUT 310-2 CP, 502-8
GND 307-3 SW-574, 151-2
CH-1 HIFI GND 317-2 CP, 507-5
HEADPHONES OUT (G) 306-3 HP, 651-1
MONITOR SELECT (A) OUT 310-7 CP, 502-3
MONITOR SELECT (A) IN 307-1 SW-574, 151-3
MONITOR SELECT (B) IN 307-2 SW-574, 151-4
MONITOR SELECT (B) OUT 310-8 CP, 502-2
N.C L:LIMITER ON IN 307-7 SW-514B, 603-2
MUTE OUT 310-9 CP, 502-1
METER L:AFM/H:LAU IN 307-4 SW-574, 151-1
AU OUT L:AFM/H:LAU IN 307-5 SW-514B, 603-4
CH-2 HIFI (X) OUT 317-4 CP, 507-3
CH-2 AFM IN 1/2
CH-2 NORMAL/HIFI (X) OUT 317-6 CP, 507-1
CH-2 MONITOR OUT (X) 310-3 CP, 502-7
CH-2 HEADPHONES OUT 306-2 HP, 651-2
TC DATA GND 312-1 (OPTION), 554-10
GND 312-8 (OPTION), 554-3
CH-2 AU GND (G) OUT 310-4 CP, 502-6
CH-2 HIFI GND 317-5 CP, 507-2
N.C — 311-1 SS (2/5), 142-13
N.C — 313-1 SS (3/5), 140-7
REG 12V OUT 310-5 CP, 502-5
GND 310-6 CP, 502-4

① TP203 (I-4) PB mode



② TP204 (I-3) PB mode



Measurement Condition

PB mode: KRV-45HPS (NORMAL: 400Hz)

AU-179C (2/2)

1-643-488-23 (1)
SVP-9020

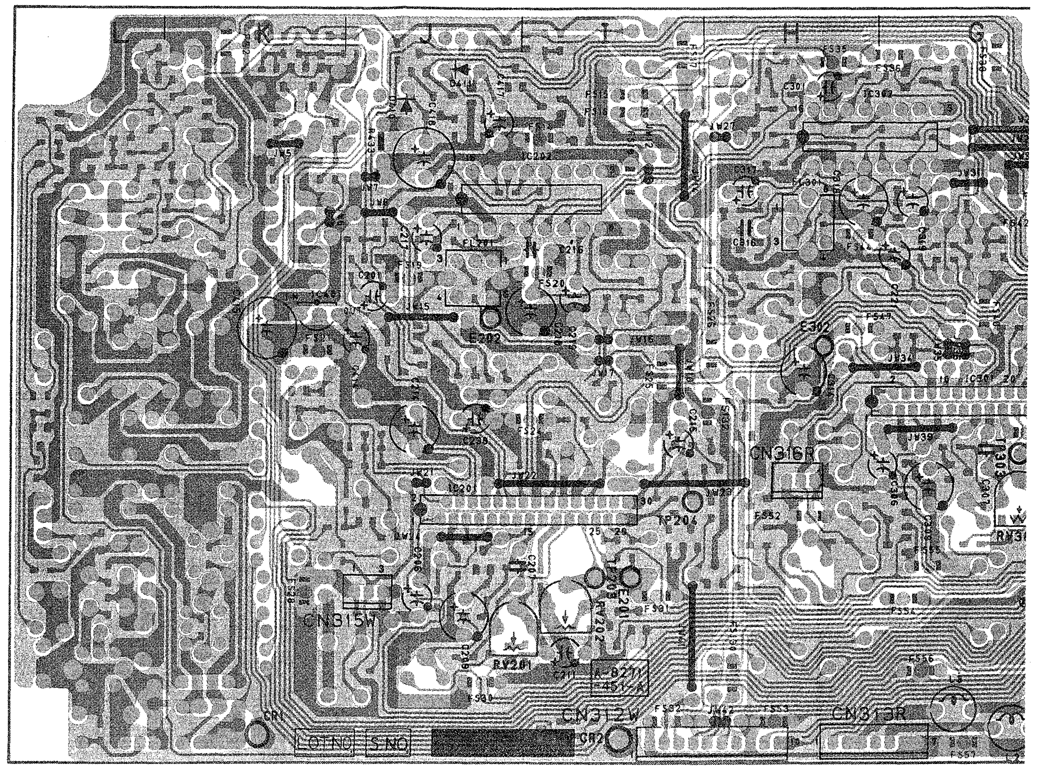
AU-179C ; AFM PROCESS/NORMAL AUDIO PROCESS

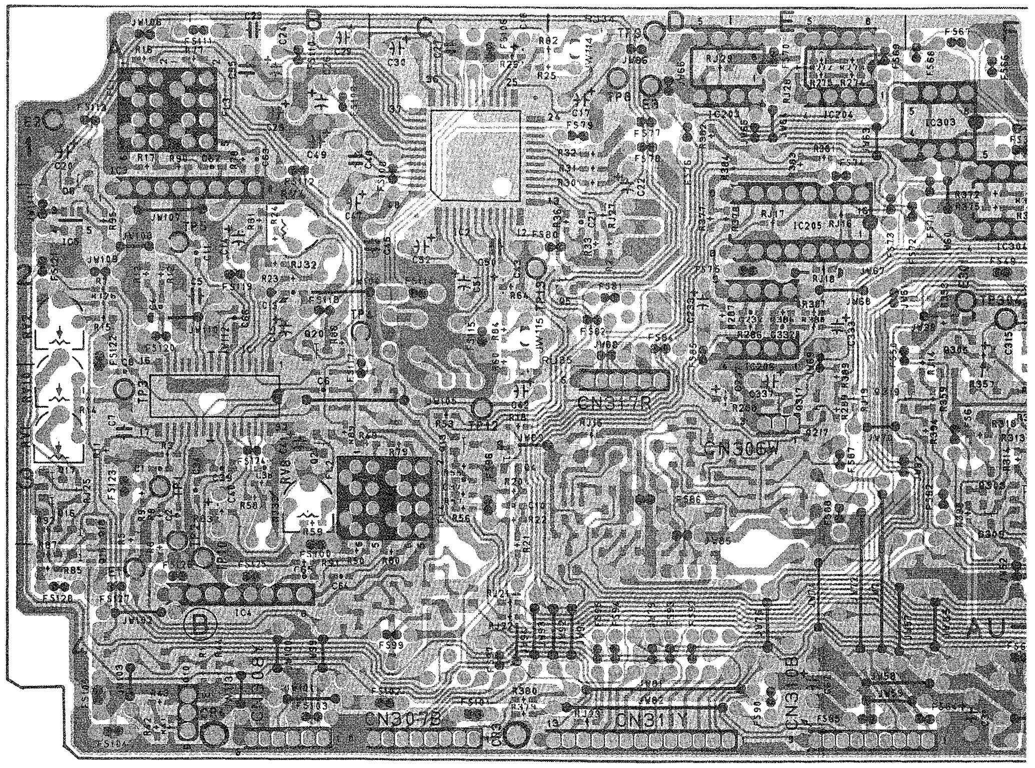
Serial No. 10031-10680

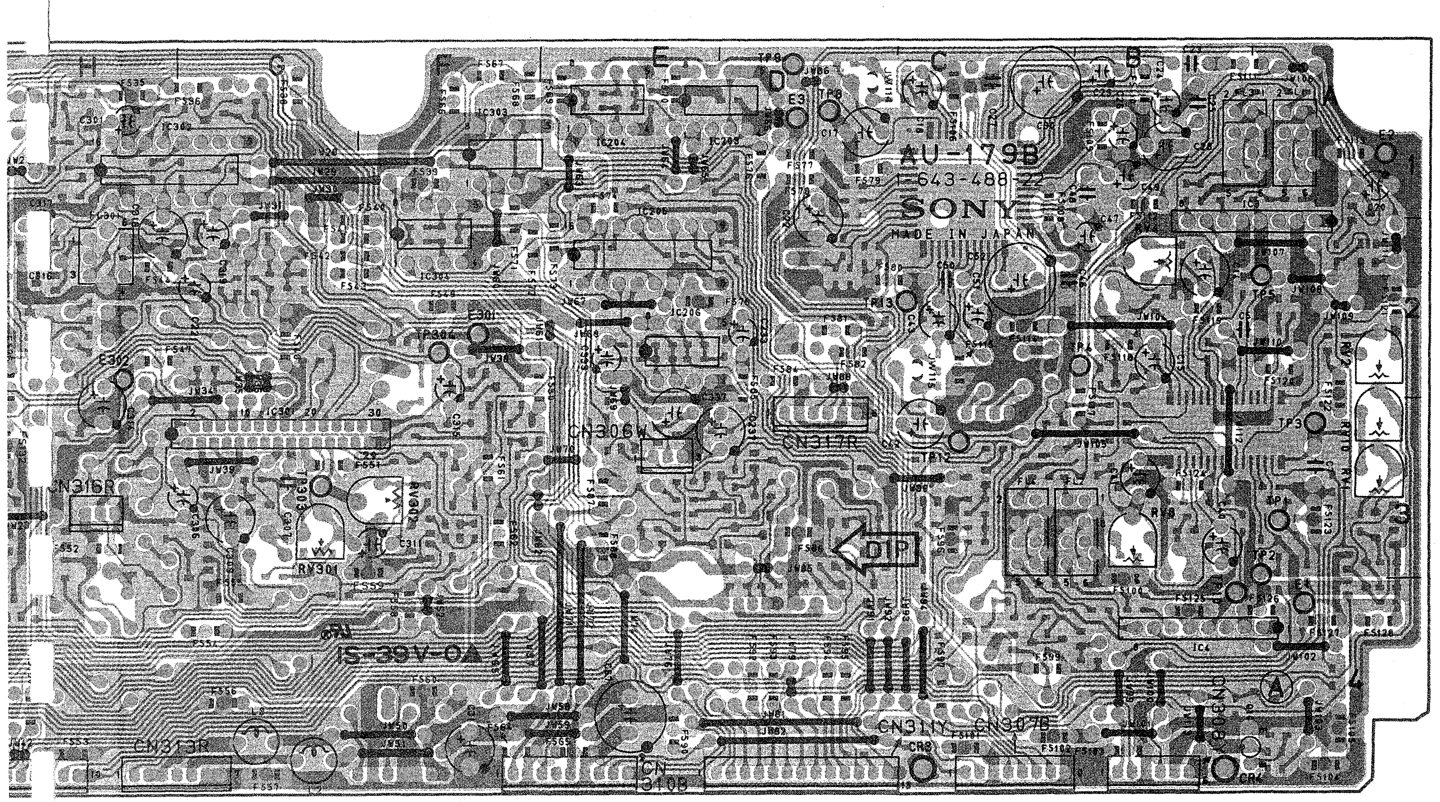
AU-179C (1-643-488-22)

CN306	E-3
CN307	C-4
CN308	B-4
CN310	E-4
CN311	D-4
CN312	I-4
CN313	H-4
CN315	K-4
CN316	H-3
CN317	D-3
CR1	K-4
CR2	I-4
CR3	C-4
D8	A-2 *
D202	J-3 *
D206	J-4 *
D302	H-1 *
D303	J-1 *
D306	G-3 *
D309	F-3 *
D409	J-1 *
D410	J-1
D411	J-1
E1	A-4
E2	A-1
E3	D-1
E201	I-4
E202	J-2
E301	F-2
E302	H-2
FL1	A-1
FL2	C-3
FL201	J-1
FL301	H-1
IC1	B-2 *
IC2	C-2 *
IC5	A-2 *
IC201	J-3
IC202	I-1
IC203	D-1
IC204	E-1
IC205	E-1
IC206	E-2
IC301	G-3
IC302	H-1
IC303	F-1
IC304	F-2
IC401	K-2
Q4	C-3 *
Q5	D-2 *
Q10	A-4
Q13	C-3 *
Q20	B-2 *
Q21	B-3 *
Q201	J-2 *
Q203	I-4 *
Q205	H-3 *
Q217	E-3 *
Q219	H-4 *
Q301	H-1 *
Q303	F-3 *
Q305	F-2 *
Q307	G-1 *
Q313	I-1 *
Q314	I-1 *
Q317	E-3 *
Q319	E-3 *
Q320	H-2 *
Q322	F-2 *
Q323	G-4 *
Q324	G-3 *
Q329	G-2 *
Q416	J-1 *
Q422	J-1 *
RV1	A-3
RV2	A-2
RV4	B-2
RV5	D-1
RV8	B-3
RV9	D-2
RV201	J-4
RV202	I-4
RV301	G-3
RV302	F-3
TP1	A-3
TP2	A-3
TP3	A-3
TP4	B-2
TP5	A-2
TP7	C-3
TP8	D-1
TP9	D-1
TP10	B-4
TP12	C-3
TP13	D-2
TP203	I-4
TP204	I-3
TP303	G-3
TP304	F-2

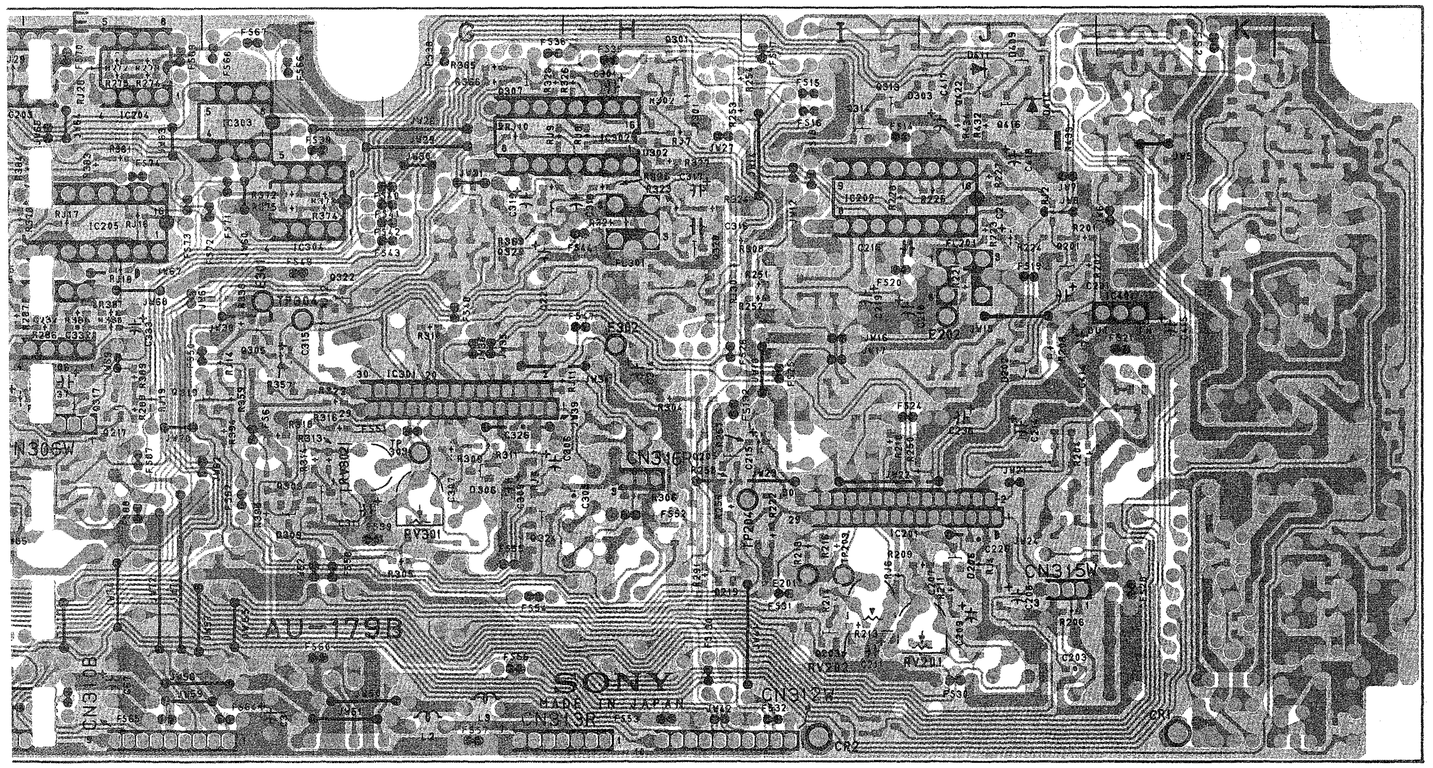
* mark ; B SIDE mount





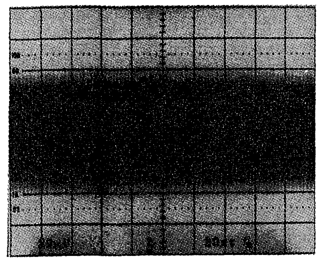

AU-179B
1-643-488-22
SONY
MADE IN JAPAN
CN306W
CN317R
CN316R
CN313R
CN311Y
CN307B
CN310B
DIP
IS-39V-0A

AU-179C — A SIDE —
1-643-488-22 (1)
SVP-9020

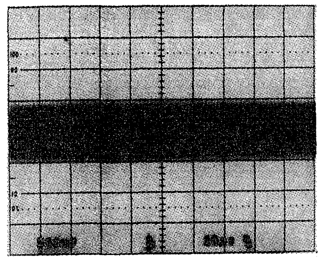

AU-179B
SONY
MADE IN JAPAN
CN306W
CN316R
CN315W
CN312W
CN313R
CN310B
RV301

AU-179C — B SIDE —
1-643-488-22 (1)
SVP-9020

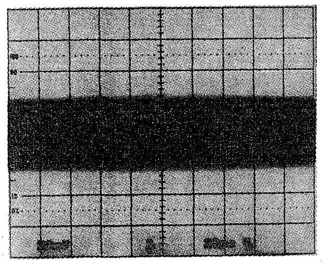
① TP1 (A-3) PB mode



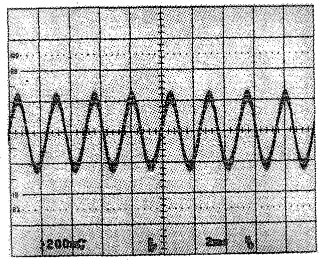
② TP4 (B-2) PB mode



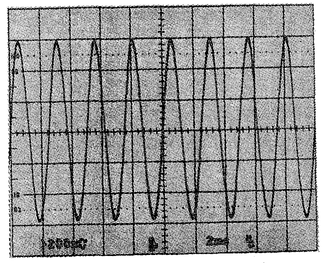
③ TP5 (A-2) PB mode



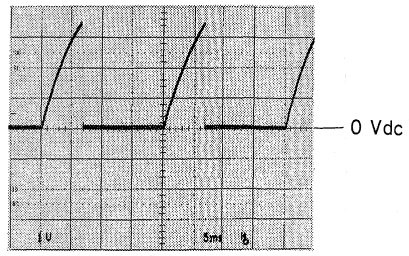
④ TP8 (D-1) PB mode



⑤ TP9 (D-1) PB mode



⑥ TP3 (A-3) PB mode

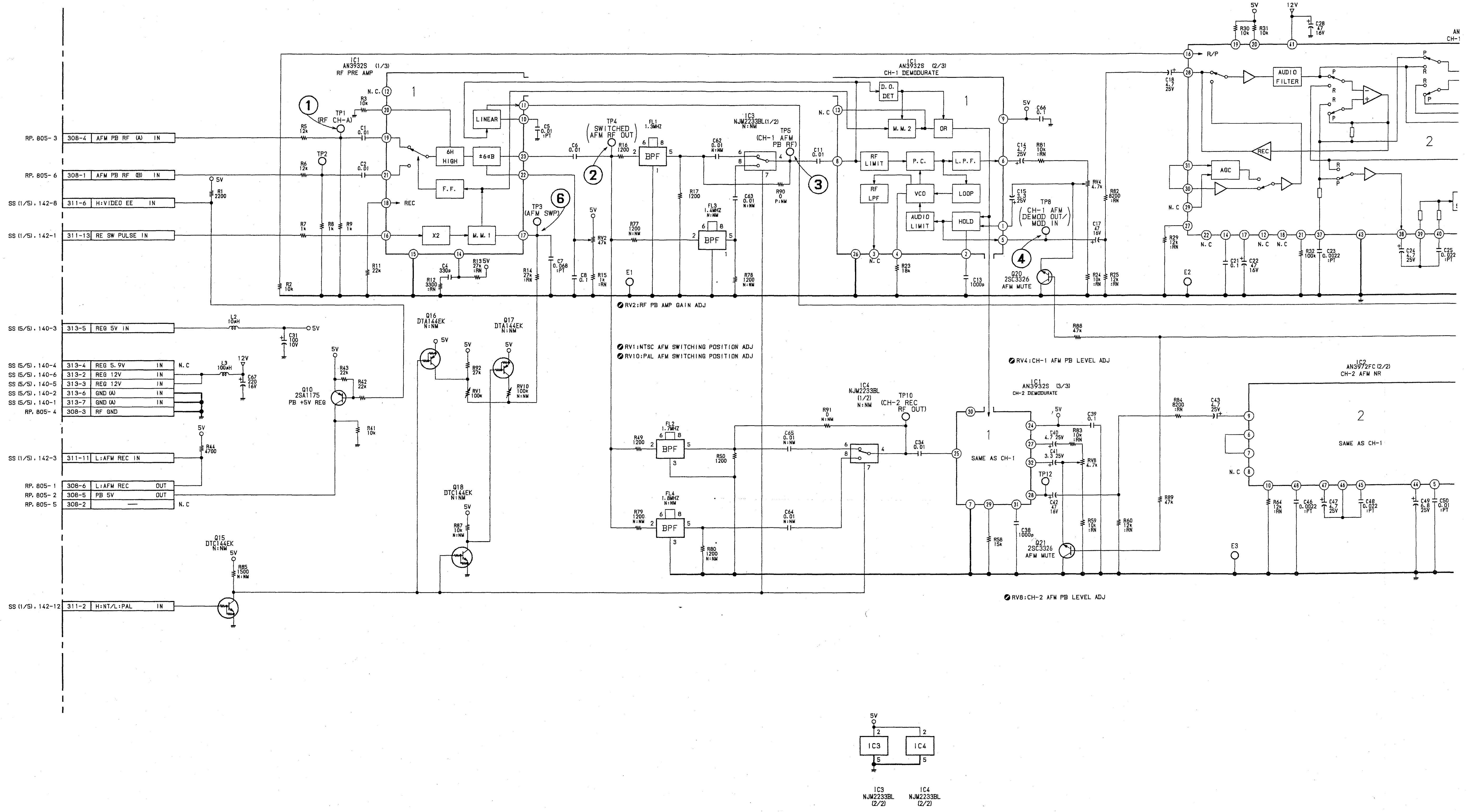


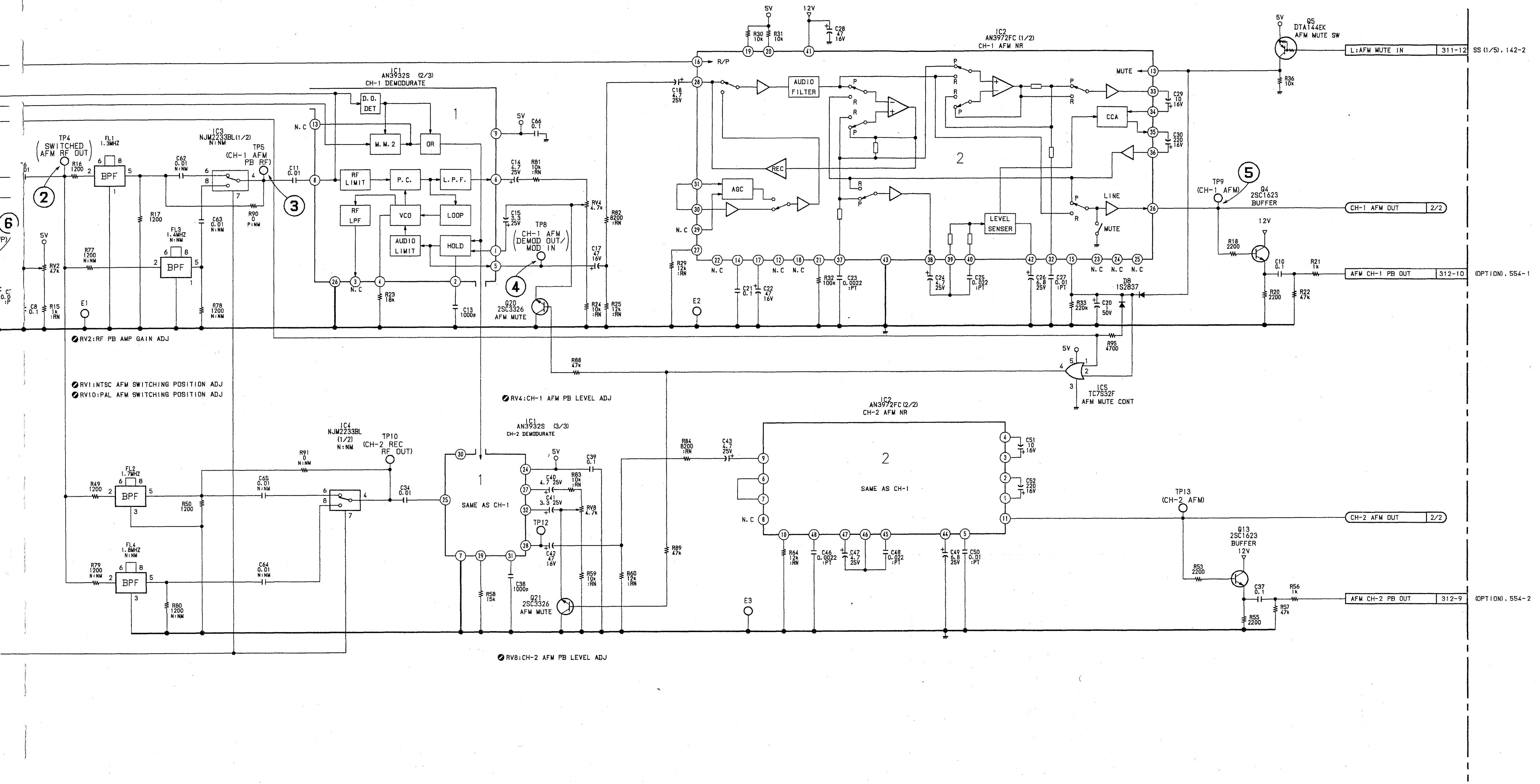
Measurement Condition

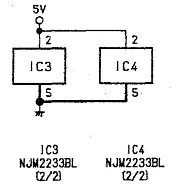
PB mode: KRV-45HPS (Hi-Fi)

AU-179C (1/2); AFM PROCESS

Serial No. 10031-10680


RP. 805-3
308-4 AFM PB RF (A) IN
RP. 805-6
308-1 AFM PB RF (B) IN
SS (1/5). 142-8
311-6 H:VIDEO EE IN
SS (1/5). 142-1
311-13 RE SW PULSE IN
SS (5/5). 140-3
313-5 REG 5V IN
SS (5/5). 140-4
313-4 REG 5.9V IN
SS (5/5). 140-6
313-2 REG 12V IN
SS (5/5). 140-5
313-3 REG 12V IN
SS (5/5). 140-2
313-6 GND (A) IN
SS (5/5). 140-1
313-7 GND (A) IN
RP. 805-4
308-3 RF GND
SS (1/5). 142-3
311-11 L:AFM REC IN
RP. 805-1
308-6 L:AFM REC OUT
RP. 805-2
308-5 PB 5V OUT
RP. 805-5
308-2 — N.C
SS (1/5). 142-12
311-2 H:NT/L:PAL IN
IC1 AN3932S (1/3) RF PRE AMP
IC1 AN3932S (2/3) CH-1 DEMODURATE
IC1 AN3932S (3/3) CH-2 DEMODURATE
IC2 AN3972FC (2/2) CH-2 AFM NR
IC3 NJM2233BL (1/2) N:NM
IC4 NJM2233BL (1/2) N:NM
TP1 (RF CH-A)
TP2
TP3 (AFM SWP)
TP4 (SWITCHED AFM RF OUT)
TP5 (CH-1 AFM PB RF)
TP8 (CH-1 AFM DEMOD OUT/MOD IN)
TP10 (CH-2 REC RF OUT)
TP12
LINEAR
6H HIGH
±6dB
F.F.
X2
M.M.1
REC
BPF
FL1 1.3MHZ
FL2 1.7MHZ
FL3 1.4MHZ N:NM
FL4 1.8MHZ N:NM
D.O. DET
M.M.2
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
AUDIO FILTER
AGC
REC
SAME AS CH-1
Q10 2SA1175 PB +5V REG
Q15 DTC144EK N:NM
Q16 DTA144EK N:NM
Q17 DTA144EK N:NM
Q18 DTC144EK N:NM
Q20 2SC3326 AFM MUTE
Q21 2SC3326 AFM MUTE
RV1 100k
RV2 47k
RV10 100k N:NM
RV4 4.7k
RV8 4.7k
E1
E2
E3
5V
12V
R/P
N.C
RV2:RF PB AMP GAIN ADJ
RV1:NTSC AFM SWITCHING POSITION ADJ
RV10:PAL AFM SWITCHING POSITION ADJ
RV4:CH-1 AFM PB LEVEL ADJ
RV8:CH-2 AFM PB LEVEL ADJ
IC3 NJM2233BL (2/2)
IC4 NJM2233BL (2/2)


IC1
AN3932S (2/3)
CH-1 DEMODURATE
D.O. DET
M.M.2
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
IC3
NJM2233BL(1/2)
N:NM
TP4
(SWITCHED AFM RF OUT)
FL1
1.3MHZ
BPF
TP5
(CH-1 AFM PB RF)
FL3
1.4MHZ
N:NM
RV2 47k
TP8
(CH-1 AFM DEMOD OUT/ MOD IN)
Q20
2SC3326
AFM MUTE
RV4 4.7k
IC2
AN3972FC (1/2)
CH-1 AFM NR
R/P
AUDIO FILTER
AGC
REC
CCA
LINE
MUTE
LEVEL SENSER
D8
1S2837
IC5
TC7S32F
AFM MUTE CONT
Q5
DTA144EK
AFM MUTE SW
L:AFM MUTE IN
311-12
SS (1/5), 142-2
TP9
(CH-1 AFM)
Q4
2SC1623
BUFFER
12V
CH-1 AFM OUT
2/2
AFM CH-1 PB OUT
312-10
(OPTION), 554-1
E1
E2
E3
RV2:RF PB AMP GAIN ADJ
RV1:NTSC AFM SWITCHING POSITION ADJ
RV10:PAL AFM SWITCHING POSITION ADJ
RV4:CH-1 AFM PB LEVEL ADJ
IC4
NJM2233BL
(1/2)
N:NM
TP10
(CH-2 REC RF OUT)
FL2
1.7MHZ
FL4
1.8MHZ
N:NM
IC1
AN3932S (3/3)
CH-2 DEMODURATE
SAME AS CH-1
TP12
Q21
2SC3326
AFM MUTE
RV8 4.7k
IC2
AN3972FC (2/2)
CH-2 AFM NR
SAME AS CH-1
TP13
(CH-2 AFM)
Q13
2SC1623
BUFFER
CH-2 AFM OUT
AFM CH-2 PB OUT
312-9
(OPTION), 554-2
RV8:CH-2 AFM PB LEVEL ADJ
5V
N.C


5V
IC3
IC4
2
5

IC3
NJM2233BL
(2/2)

IC4
NJM2233BL
(2/2)

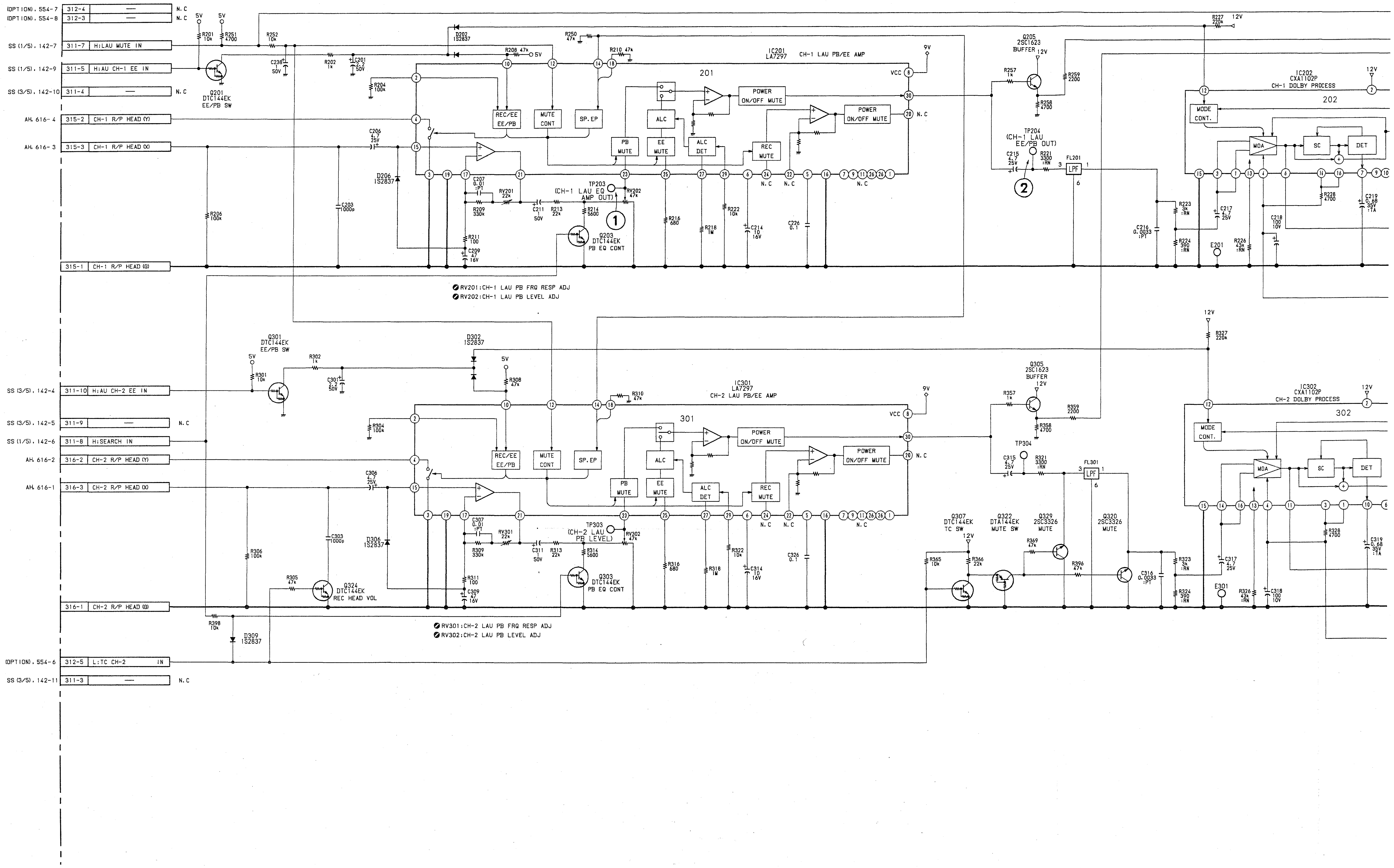
N=NTSC
P=PAL
NM=No Mount

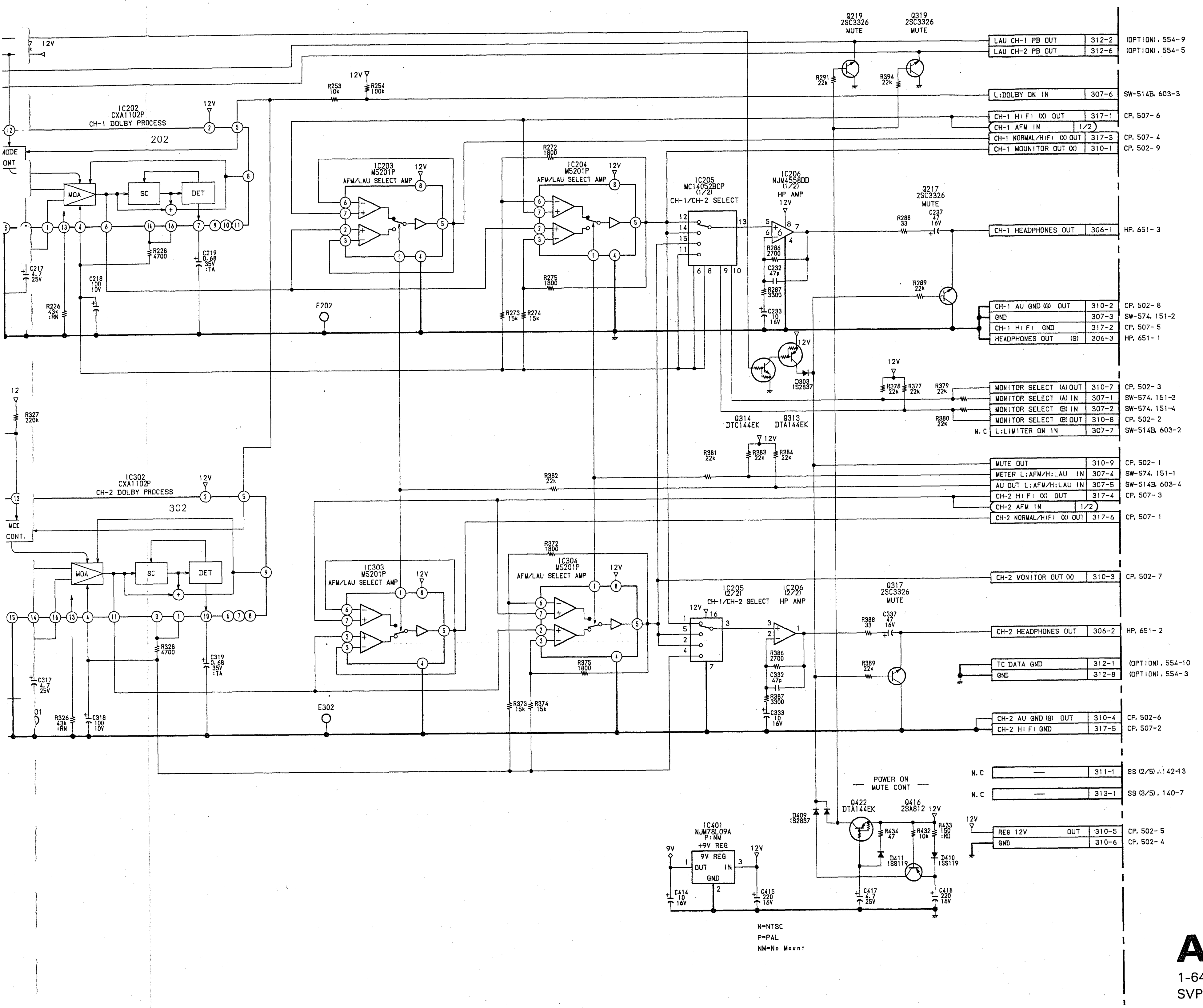
AU-179C (1/2)

1-643-488-22 (1)
SVP-9020

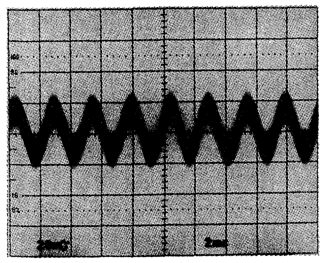
AU-179C (2/2); NORMAL AUDIO PROCESS

Serial No. 10031-10680

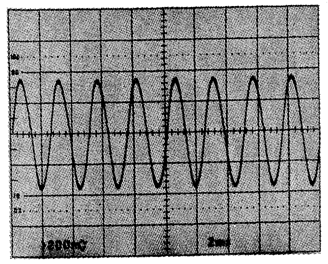

(OPTION), 554-7 312-4 — N.C
(OPTION), 554-8 312-3 — N.C
SS (1/5), 142-7 311-7 H:LAU MUTE IN
SS (1/5), 142-9 311-5 H:AU CH-1 EE IN
SS (3/5), 142-10 311-4 — N.C
AH, 616-4 315-2 CH-1 R/P HEAD (Y)
AH, 616-3 315-3 CH-1 R/P HEAD (X)
315-1 CH-1 R/P HEAD (G)
SS (3/5), 142-4 311-10 H:AU CH-2 EE IN
SS (3/5), 142-5 311-9 — N.C
SS (1/5), 142-6 311-8 H:SEARCH IN
AH, 616-2 316-2 CH-2 R/P HEAD (Y)
AH, 616-1 316-3 CH-2 R/P HEAD (X)
316-1 CH-2 R/P HEAD (G)
(OPTION), 554-6 312-5 L:TC CH-2 IN
SS (3/5), 142-11 311-3 — N.C
Q201 DTC144EK EE/PB SW
IC201 LA7297 CH-1 LAU PB/EE AMP
201
REC/EE EE/PB
MUTE CONT
SP.EP
PB MUTE
EE MUTE
ALC
ALC DET
REC MUTE
POWER ON/OFF MUTE
VCC
TP203 (CH-1 LAU EQ AMP OUT)
Q203 DTC144EK PB EQ CONT
①
RV201:CH-1 LAU PB FRQ RESP ADJ
RV202:CH-1 LAU PB LEVEL ADJ
Q205 2SC1623 BUFFER
TP204 (CH-1 LAU EE/PB OUT)
②
FL201 LPF
IC202 CXA1102P CH-1 DOLBY PROCESS
202
MODE CONT.
MDA
SC
DET
E201
Q301 DTC144EK EE/PB SW
D302 1S2837
IC301 LA7297 CH-2 LAU PB/EE AMP
301
TP303 (CH-2 LAU PB LEVEL)
Q303 DTC144EK PB EQ CONT
Q324 DTC144EK REC HEAD VOL
D309 1S2837
RV301:CH-2 LAU PB FRQ RESP ADJ
RV302:CH-2 LAU PB LEVEL ADJ
Q305 2SC1623 BUFFER
TP304
FL301 LPF
Q307 DTC144EK TC SW
Q322 DTA144EK MUTE SW
Q329 2SC3326 MUTE
Q320 2SC3326 MUTE
IC302 CXA1102P CH-2 DOLBY PROCESS
302
E301
5V
9V
12V


Q219
2SC3326
MUTE
Q319
2SC3326
MUTE
R291 22k
R394 22k
12V
R253 10k
R254 100k
IC202
CXA1102P
CH-1 DOLBY PROCESS
202
MODE CONT
MOA
SC
DET
R226 4700
C219 0.68 35V :TA
C217 4.7 25V
C218 100 10V
R226 43k :RN
IC203
M5201P
AFM/LAU SELECT AMP
IC204
M5201P
AFM/LAU SELECT AMP
R272 1800
R275 1800
R273 15k
R274 15k
E202
IC205
MC14052BCP
(1/2)
CH-1/CH-2 SELECT
IC206
NJM4558DD
(1/2)
HP AMP
Q217
2SC3326
MUTE
R288 33
C237 47 16V
R286 2700
C232 47p
R287 3300
C233 10 16V
R289 22k
D303 1S2837
Q314 DTC144EK
Q313 DTA144EK
R378 22k
R377 22k
R379 22k
R380 22k
R381 22k
R383 22k
R384 22k
R382 22k
R327 220k
IC302
CXA1102P
CH-2 DOLBY PROCESS
302
MOD CONT.
IC303
M5201P
AFM/LAU SELECT AMP
IC304
M5201P
AFM/LAU SELECT AMP
R372 1800
R375 1800
R328 4700
C319 0.68 35V :TA
C317 4.7 25V
R326 43k :RN
C318 100 10V
E302
R373 15k
R374 15k
IC205 (2/2) CH-1/CH-2 SELECT
IC206 (2/2) HP AMP
Q317
2SC3326
MUTE
R388 33
C337 47 16V
R386 2700
C332 47p
R387 3300
C333 10 16V
R389 22k
POWER ON MUTE CONT
Q422 DTA144EK
Q416 2SA812
D409 1S2837
R434 47
R432 10k
R433 150 :RD
D411 1SS119
D410 1SS119
C417 4.7 25V
C418 220 16V
IC401
NJM78L09A
P:NM
+9V REG
9V REG
OUT IN
GND
9V
12V
C414 10 16V
C415 220 16V
N=NTSC
P=PAL
NM=No Mount
LAU CH-1 PB OUT | 312-2 | (OPTION), 554-9
LAU CH-2 PB OUT | 312-6 | (OPTION), 554-5
L:DOLBY ON IN | 307-6 | SW-514B, 603-3
CH-1 HiFi (X) OUT | 317-1 | CP, 507-6
CH-1 AFM IN | 1/2
CH-1 NORMAL/HiFi (X) OUT | 317-3 | CP, 507-4
CH-1 MOUNITOR OUT (X) | 310-1 | CP, 502-9
CH-1 HEADPHONES OUT | 306-1 | HP, 651-3
CH-1 AU GND (G) OUT | 310-2 | CP, 502-8
GND | 307-3 | SW-574, 151-2
CH-1 HiFi GND | 317-2 | CP, 507-5
HEADPHONES OUT (G) | 306-3 | HP, 651-1
MONITOR SELECT (A) OUT | 310-7 | CP, 502-3
MONITOR SELECT (A) IN | 307-1 | SW-574, 151-3
MONITOR SELECT (B) IN | 307-2 | SW-574, 151-4
MONITOR SELECT (B) OUT | 310-8 | CP, 502-2
N.C | L:LIMITER ON IN | 307-7 | SW-514B, 603-2
MUTE OUT | 310-9 | CP, 502-1
METER L:AFM/H:LAU IN | 307-4 | SW-574, 151-1
AU OUT L:AFM/H:LAU IN | 307-5 | SW-514B, 603-4
CH-2 HiFi (X) OUT | 317-4 | CP, 507-3
CH-2 AFM IN | 1/2
CH-2 NORMAL/HiFi (X) OUT | 317-6 | CP, 507-1
CH-2 MONITOR OUT (X) | 310-3 | CP, 502-7
CH-2 HEADPHONES OUT | 306-2 | HP, 651-2
TC DATA GND | 312-1 | (OPTION), 554-10
GND | 312-8 | (OPTION), 554-3
CH-2 AU GND (G) OUT | 310-4 | CP, 502-6
CH-2 HiFi GND | 317-5 | CP, 507-2
N.C | — | 311-1 | SS (2/5), 142-13
N.C | — | 313-1 | SS (3/5), 140-7
REG 12V OUT | 310-5 | CP, 502-5
GND | 310-6 | CP, 502-4

① TP203 (I-4) PB mode



② TP204 (I-3) PB mode



Measurement Condition

PB mode: KRV-45HPS (NORMAL: 400Hz)

AU-179C (2/2)

1-643-488-22 (1)
SVP-9020

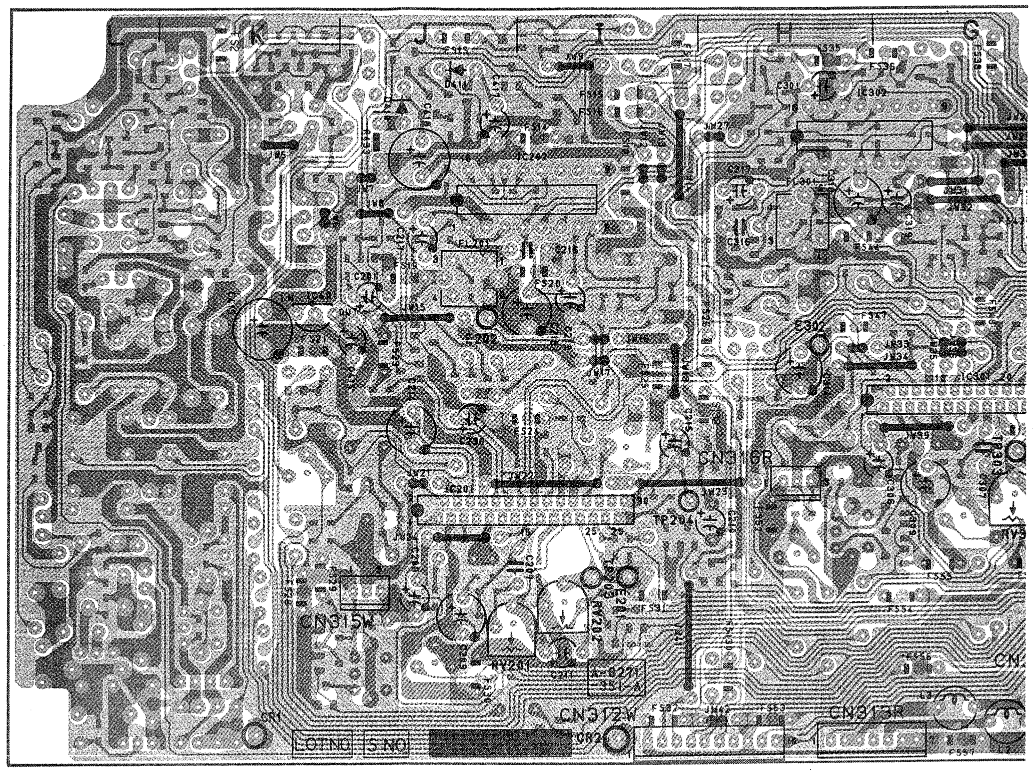
AU-179C; AFM PROCESS/NORMAL AUDIO PROCESS

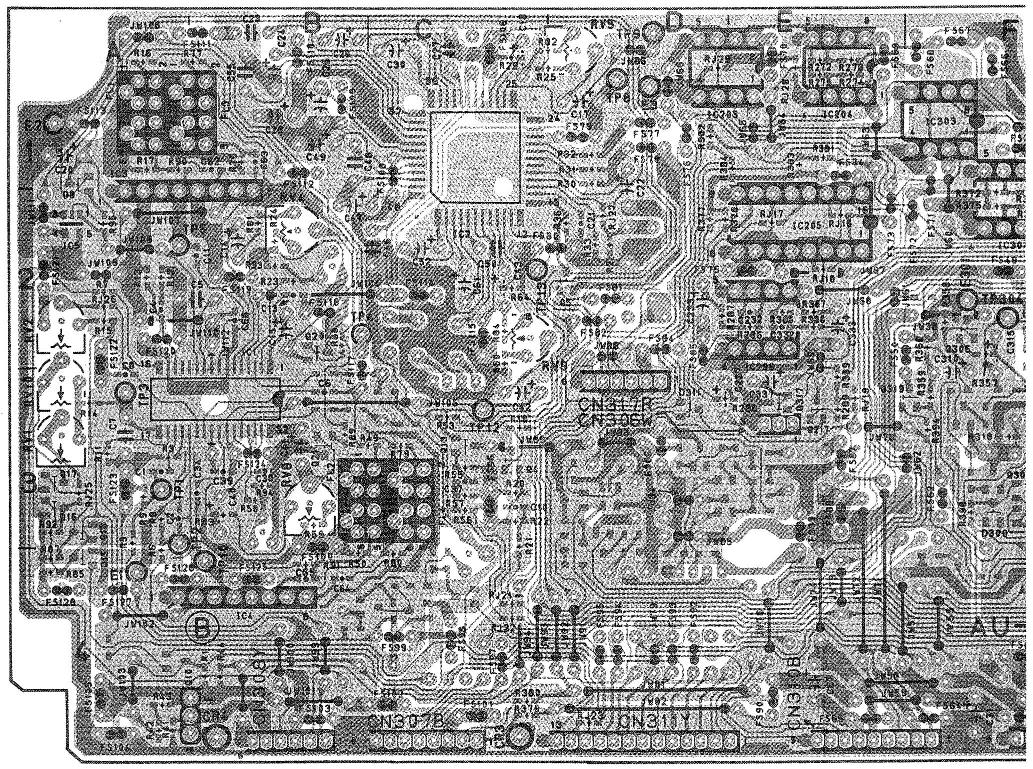
Serial No. 10001-10030

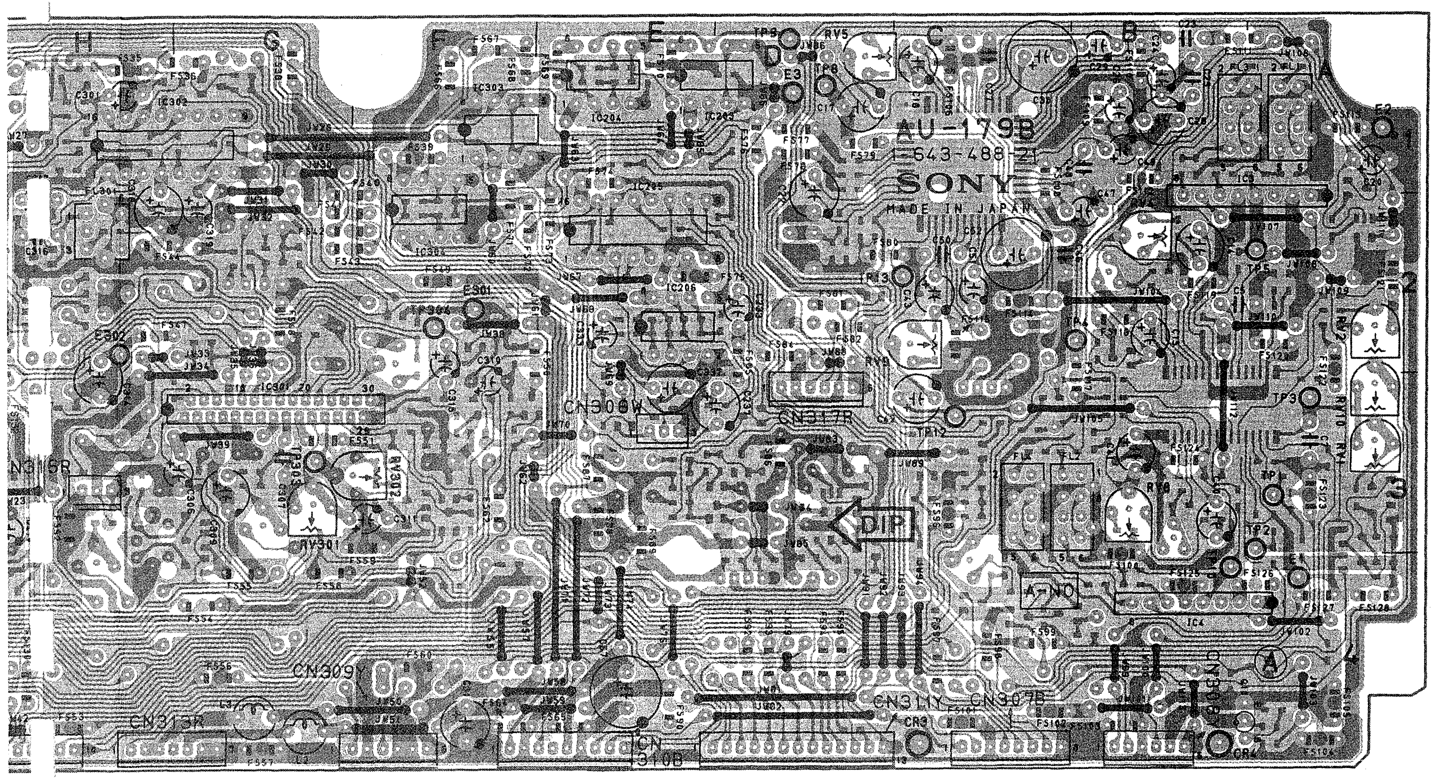
AU-179C (1-643-488-21)

CN306	E-3
CN307	C-4
CN308	B-4
CN310	E-4
CN311	D-4
CN312	I-4
CN313	H-4
CN315	K-4
CN316	H-3
CN317	D-3
CR1	K-4
CR2	I-4
CR3	C-4
D8	A-2 *
D202	J-3 *
D302	H-1 *
D303	J-1 *
D309	F-3 *
D409	J-1 *
D410	J-1
D411	J-1
E1	A-4
E2	A-1
E3	D-1
E201	I-4
E202	J-2
E301	F-2
E302	H-2
FL1	A-1
FL2	C-3
FL201	J-2
FL301	H-2
IC1	B-2 *
IC2	C-2 *
IC5	A-2 *
IC201	J-3
IC202	I-1
IC203	D-1
IC204	E-1
IC205	E-1
IC206	E-2
IC301	G-3
IC302	H-1
IC303	F-1
IC304	F-2
IC401	K-2
Q4	C-3 *
Q5	D-2 *
Q10	A-4
Q13	C-3 *
Q20	B-2 *
Q21	B-3 *
Q201	J-2 *
Q203	I-4 *
Q205	H-3 *
Q217	E-3 *
Q219	H-4 *
Q224	K-4 *
Q301	H-1 *
Q303	F-3 *
Q305	F-2 *
Q307	G-1 *
Q313	I-1 *
Q314	I-1 *
Q317	E-3 *
Q319	E-3 *
Q320	H-2 *
Q322	F-2 *
Q323	G-4 *
Q324	G-3 *
Q329	G-2 *
Q416	J-1 *
Q422	J-1 *
RV1	A-3
RV2	A-2
RV4	B-2
RV5	D-1
RV8	B-3
RV9	D-2
RV201	J-4
RV202	I-4
RV301	G-3
RV302	F-3
TP1	A-3
TP2	A-3
TP3	A-3
TP4	B-2
TP5	A-2
TP7	C-3
TP8	D-1
TP9	D-1
TP10	B-4
TP12	C-3
TP13	D-2
TP203	I-4
TP204	I-3
TP303	G-3
TP304	F-2

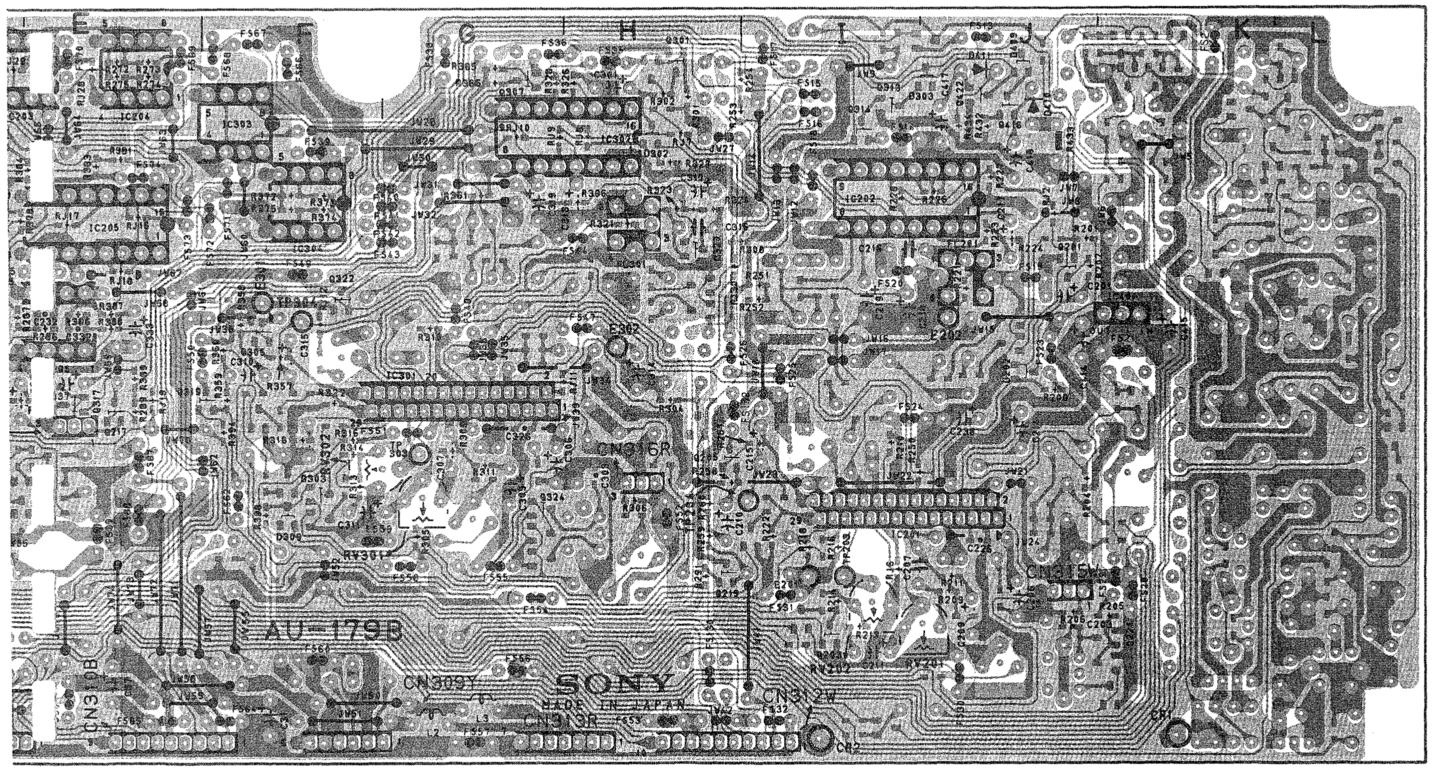
* mark; B SIDE mount


K
J
I
H
G
CN316R
CN315W
CN312W
CN313R
RV201
TP204
LOT NO
S-NO


B
C
D
E
CN317R
CN306W
CN307B
CN311
CN310B
IC4
IC5
IC203
IC204
IC205

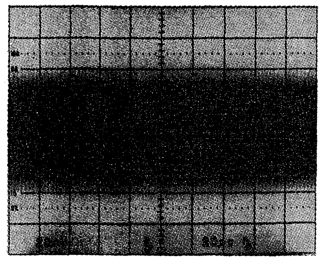

AU-179B
1-643-488-21
SONY
MADE IN JAPAN
DIP
A-NO
CN306W
CN317R
CN309Y
CN313R
CN311
CN307B
CN310B
RV301
RV302
TP3
TP4
TP5
TP8
TP9

AU-179C — A SIDE —
1-643-488-21 (1)
SVP-9020

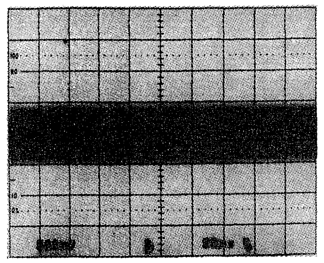

AU-179B
SONY
MADE IN JAPAN
CN309Y
CN310B
CN316R
CN312W
CN315
IC391
RV301

AU-179C — B SIDE —
1-643-488-21 (1)
SVP-9020

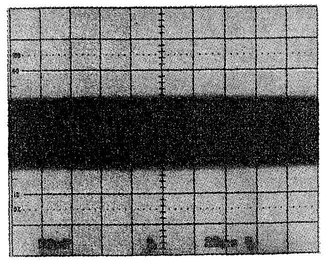
① TP1 (A-3) PB mode



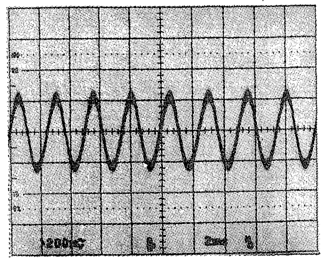
② TP4 (B-2) PB mode



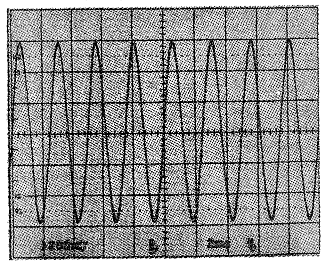
③ TP5 (A-2) PB mode



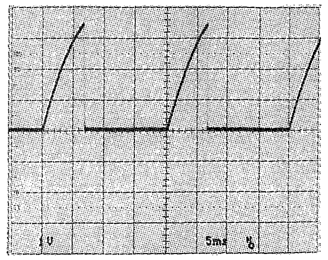
④ TP8 (D-1) PB mode



⑤ TP9 (D-1) PB mode



⑥ TP3 (A-3) PB mode

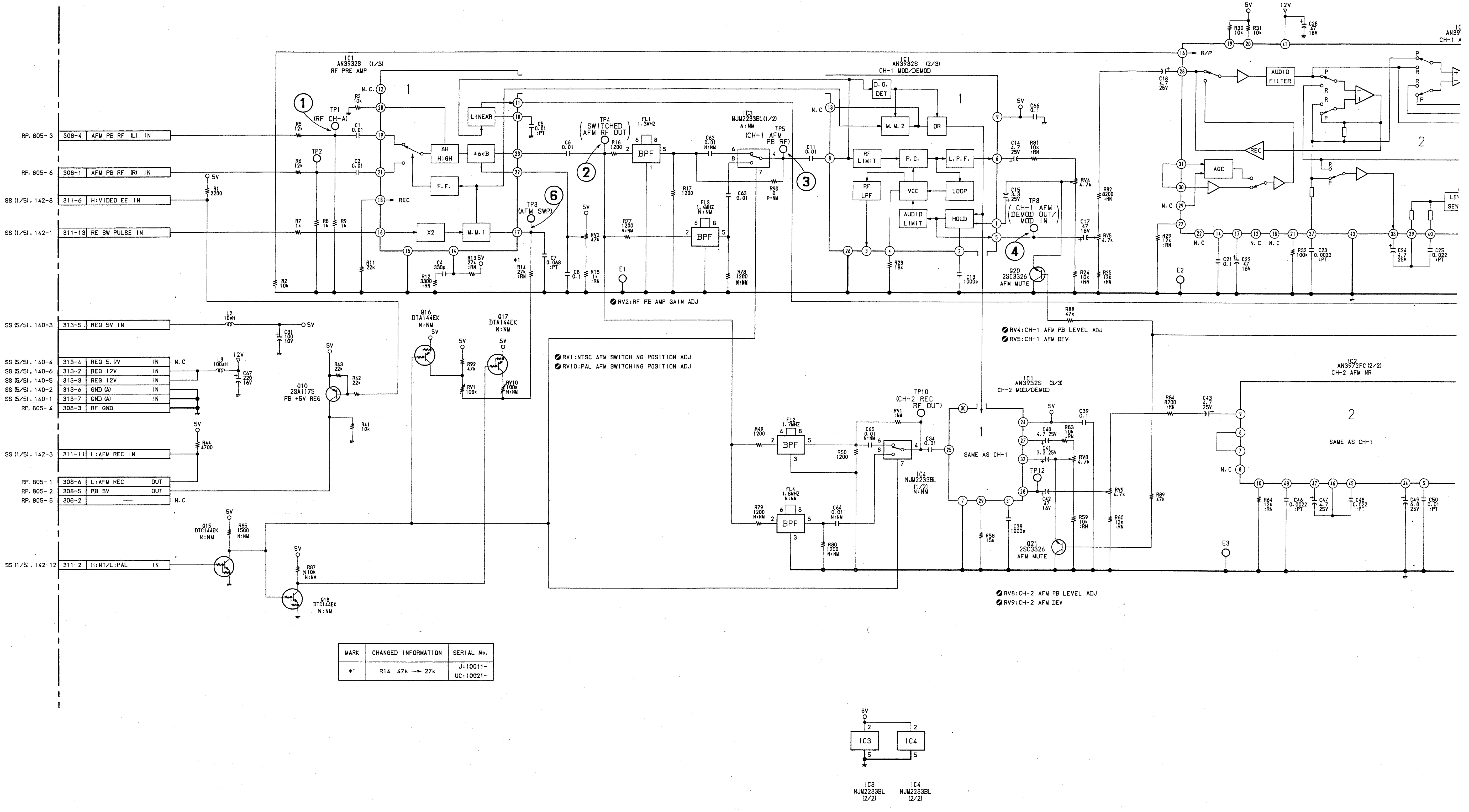


Measurement Condition

PB mode: KRV-45HPS (Hi-Fi)

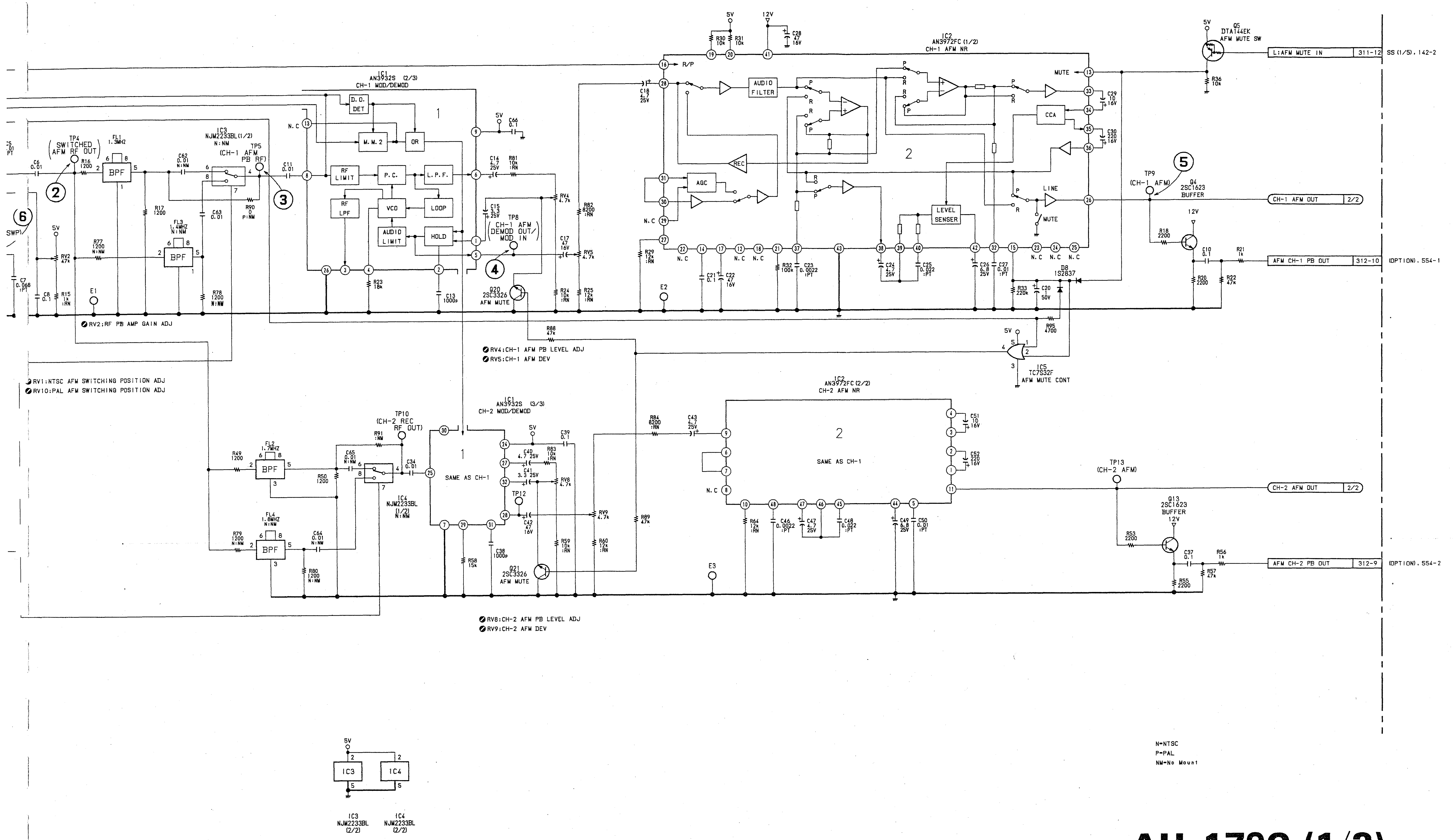
AU-179C (1/2); AFM PROCESS

Serial No. 10001-10030


IC1 AN3932S (1/3) RF PRE AMP
IC1 AN3932S (2/3) CH-1 MOD/DEMOD
IC1 AN3932S (3/3) CH-2 MOD/DEMOD
IC2 AN3972FC (2/2) CH-2 AFM NR
IC3 NJM2233BL (1/2) N:NM
IC4 NJM2233BL (1/2) N:NM
IC3 NJM2233BL (2/2)
IC4 NJM2233BL (2/2)
① TP1 (RF CH-A)
② TP4 (SWITCHED AFM RF OUT)
③ TP5 (CH-1 AFM PB RF)
④ TP8 (CH-1 AFM DEMOD OUT/MOD IN)
⑥ TP3 (AFM SWP)
TP10 (CH-2 REC RF OUT)
TP2
TP12
LINEAR
6H HIGH
±6dB
F.F.
X2
M.M.1
M.M.2
D.O. DET
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
AUDIO FILTER
AGC
REC
BPF
FL1 1.3MHZ
FL2 1.7MHZ
FL3 1.4MHZ N:NM
FL4 1.8MHZ N:NM
SAME AS CH-1
RP. 805-3 308-4 AFM PB RF (L) IN
RP. 805-6 308-1 AFM PB RF (R) IN
SS (1/5). 142-8 311-6 H:VIDEO EE IN
SS (1/5). 142-1 311-13 RE SW PULSE IN
SS (5/5). 140-3 313-5 REG 5V IN
SS (5/5). 140-4 313-4 REG 5.9V IN
SS (5/5). 140-6 313-2 REG 12V IN
SS (5/5). 140-5 313-3 REG 12V IN
SS (5/5). 140-2 313-6 GND (A) IN
SS (5/5). 140-1 313-7 GND (A) IN
RP. 805-4 308-3 RF GND
SS (1/5). 142-3 311-11 L:AFM REC IN
RP. 805-1 308-6 L:AFM REC OUT
RP. 805-2 308-5 PB 5V OUT
RP. 805-5 308-2 —
SS (1/5). 142-12 311-2 H:NT/L:PAL IN
Q10 2SA1175 PB +5V REG
Q15 DTC144EK N:NM
Q16 DTA144EK N:NM
Q17 DTA144EK N:NM
Q18 DTC144EK N:NM
Q20 2SC3326 AFM MUTE
Q21 2SC3326 AFM MUTE
RV2:RF PB AMP GAIN ADJ
RV1:NTSC AFM SWITCHING POSITION ADJ
RV10:PAL AFM SWITCHING POSITION ADJ
RV4:CH-1 AFM PB LEVEL ADJ
RV5:CH-1 AFM DEV
RV8:CH-2 AFM PB LEVEL ADJ
RV9:CH-2 AFM DEV
5V
12V
N.C
E1
E2
E3
R/P

MARK	CHANGED INFORMATION	SERIAL No.
*1	R14 47k → 27k	J:10011- UC:10021-

A | B | C | D | E | F | G | H

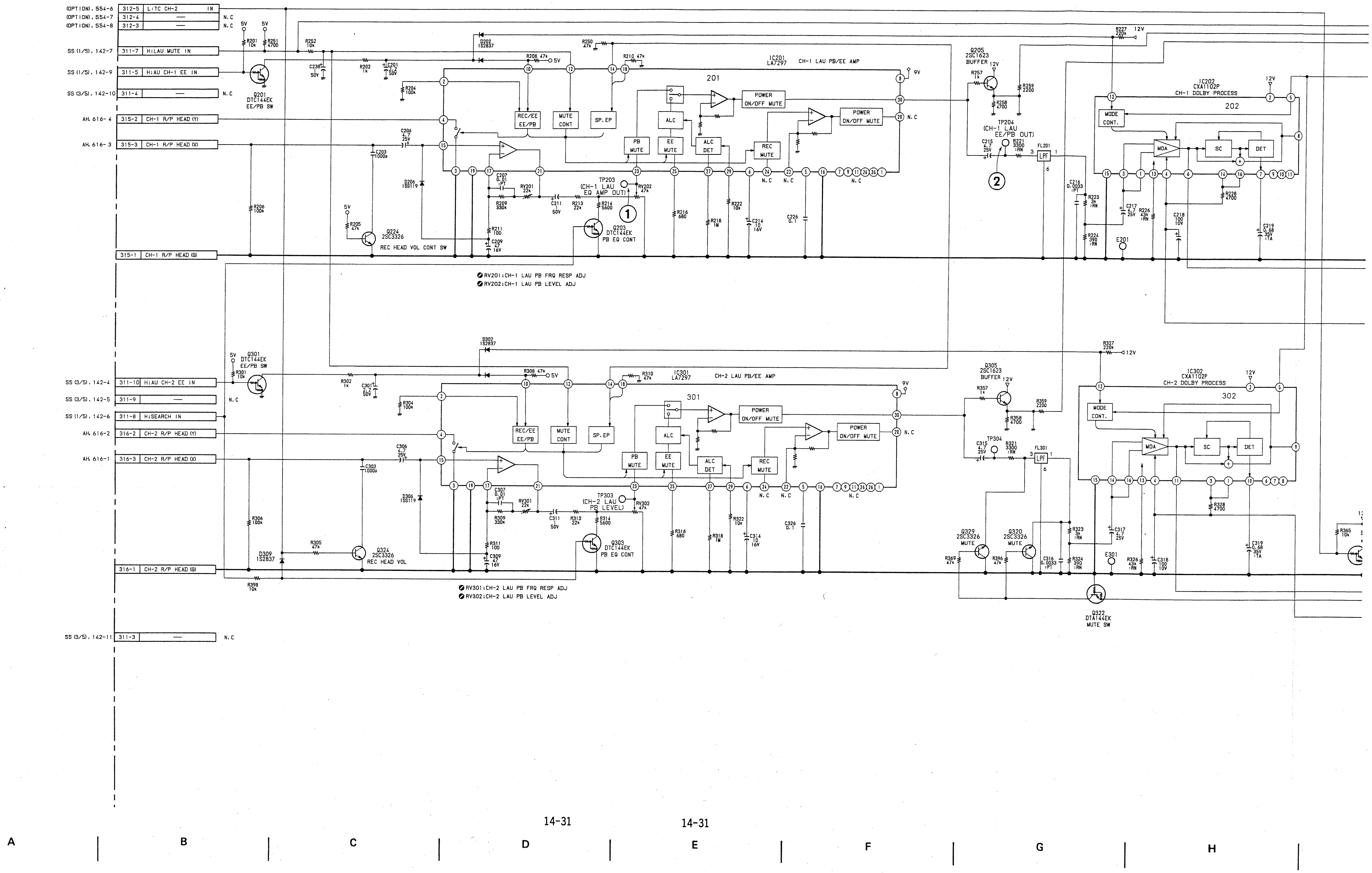

IC1 AN3932S (2/3) CH-1 MOD/DEMOD
IC1 AN3932S (3/3) CH-2 MOD/DEMOD
IC2 AN3972FC (1/2) CH-1 AFM NR
IC2 AN3972FC (2/2) CH-2 AFM NR
IC3 NJM2233BL (1/2) N:NM
IC4 NJM2233BL (1/2) N:NM
IC3 NJM2233BL (2/2)
IC4 NJM2233BL (2/2)
IC5 TC7S32F AFM MUTE CONT
Q5 DTA144EK AFM MUTE SW
Q4 2SC1623 BUFFER
Q13 2SC1623 BUFFER
Q20 2SC3326 AFM MUTE
Q21 2SC3326 AFM MUTE
D8 1S2837
TP4 (SWITCHED AFM RF OUT)
TP5 (CH-1 AFM PB RF)
TP8 (CH-1 AFM DEMOD OUT/MOD IN)
TP9 (CH-1 AFM)
TP10 (CH-2 REC RF OUT)
TP12
TP13 (CH-2 AFM)
FL1 1.3MHZ
FL2 1.7MHZ
FL3 1.4MHZ N:NM
FL4 1.8MHZ N:NM
BPF
D.O. DET
M.M.2
OR
RF LIMIT
P.C.
L.P.F.
RF LPF
VCO
LOOP
AUDIO LIMIT
HOLD
AUDIO FILTER
REC
AGC
CCA
LEVEL SENSER
LINE
MUTE
R/P
SAME AS CH-1
N.C
E1
E2
E3
5V
12V
L:AFM MUTE IN 311-12 SS (1/S), 142-2
CH-1 AFM OUT 2/2
AFM CH-1 PB OUT 312-10 (OPTION), 554-1
CH-2 AFM OUT 2/2
AFM CH-2 PB OUT 312-9 (OPTION), 554-2
RV1:NTSC AFM SWITCHING POSITION ADJ
RV10:PAL AFM SWITCHING POSITION ADJ
RV2:RF PB AMP GAIN ADJ
RV4:CH-1 AFM PB LEVEL ADJ
RV5:CH-1 AFM DEV
RV8:CH-2 AFM PB LEVEL ADJ
RV9:CH-2 AFM DEV
②
③
④
⑤
⑥
N=NTSC
P=PAL
NM=No Mount

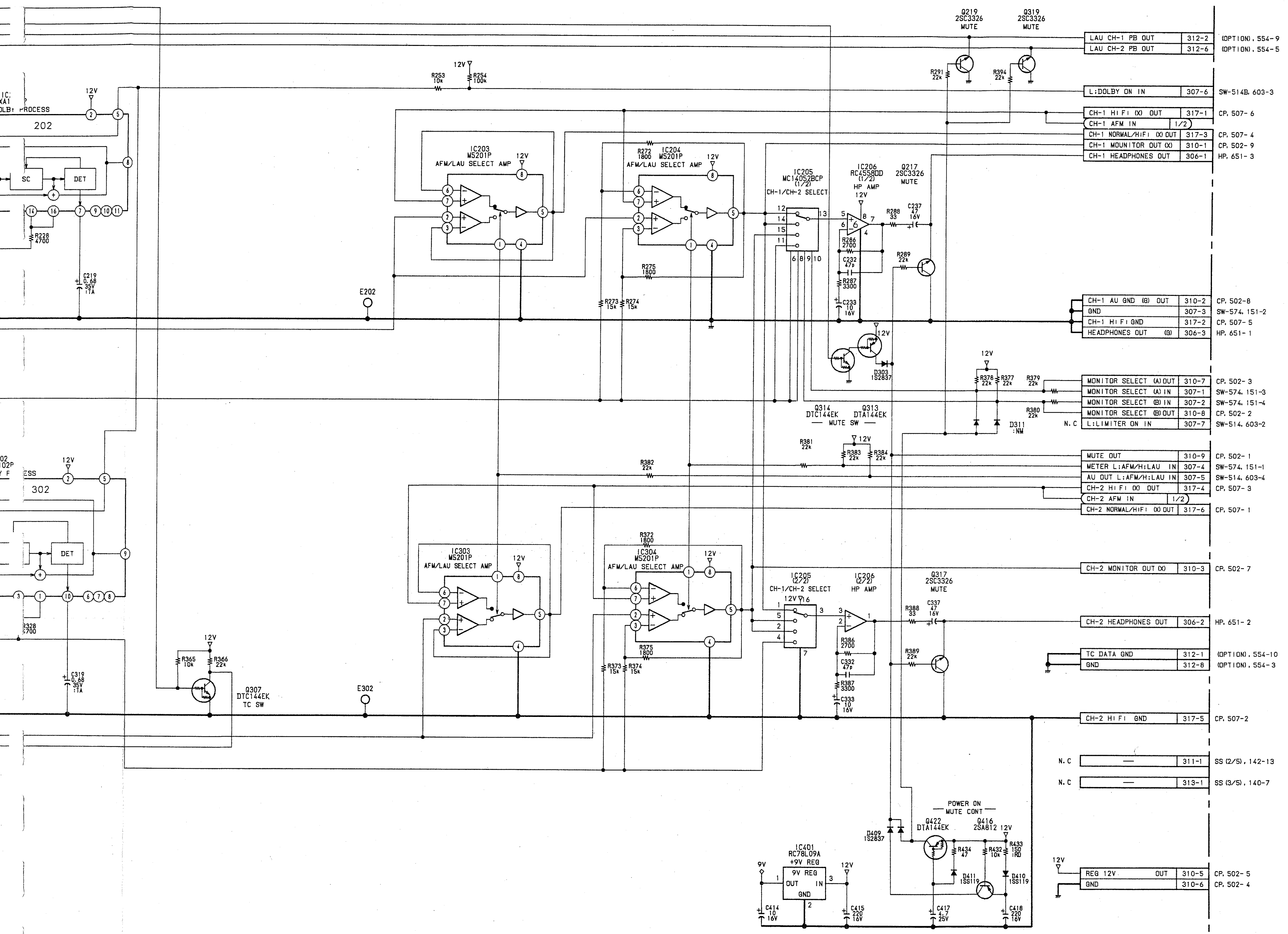
AU-179C (1/2)

1-643-488-21 (1)
SVP-9020

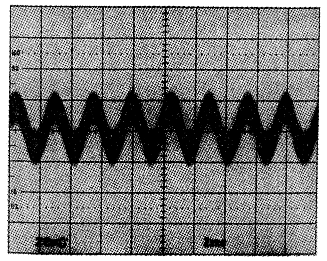
AU-179C (2/2); NORMAL AUDIO PROCESS

Serial No. 10001-10030

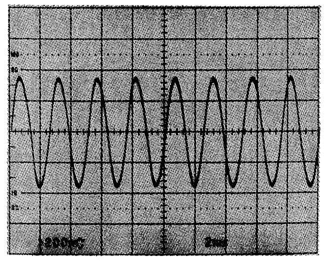

(OPTION), S54-6
312-5 L:TC CH-2 IN
(OPTION), S54-7
312-4
(OPTION), S54-8
312-3
SS (1/5), 142-7
311-7 H:LAU MUTE IN
SS (1/5), 142-9
311-5 H:AU CH-1 EE IN
SS (3/5), 142-10
311-4
AH, 616-4
315-2 CH-1 R/P HEAD (Y)
AH, 616-3
315-3 CH-1 R/P HEAD (X)
315-1 CH-1 R/P HEAD (G)
N.C
5V
R201 10k
R251 4700
Q201 DTC144EK EE/PB SW
R252 10k
C236 1 50V
R202 1k
C201 2.2 50V
R204 100k
D202 1S2837
R208 47k
R250 47k
R210 47k
IC201 LA7297 CH-1 LAU PB/EE AMP
201
9V
REC/EE EE/PB
MUTE CONT
SP. EP
PB MUTE
ALC
EE MUTE
ALC DET
REC MUTE
POWER ON/OFF MUTE
C206 4.7 25V
C203 1000p
D206 1SS119
C207 0.01 :PT
RV201 22k
R209 330k
C211 1 50V
R213 22k
R214 5600
TP203 (CH-1 LAU EQ AMP OUT)
RV202 47k
①
R216 680
R218 1M
R222 10k
C214 10 16V
C226 0.1
R206 100k
R205 47k
Q224 2SC3326 REC HEAD VOL CONT SW
R211 100
C209 47 16V
Q203 DTC144EK PB EQ CONT
RV201:CH-1 LAU PB FRQ RESP ADJ
RV202:CH-1 LAU PB LEVEL ADJ
Q205 2SC1623 BUFFER
12V
R257 1k
R258 4700
R259 2200
TP204 (CH-1 LAU EE/PB OUT)
C215 4.7 25V
R221 3300 :RN
②
FL201 LPF
R227 220k
IC202 CXA1102P CH-1 DOLBY PROCESS
202
MODE CONT.
MOA
SC
DET
C216 0.0033 :PT
R223 3k :RN
C217 4.7 25V
R226 43k :RN
R224 390 :RN
E201
C218 100 10V
R228 4700
C219 0.68 35V :TA
SS (3/5), 142-4
311-10 H:AU CH-2 EE IN
SS (3/5), 142-5
311-9
SS (1/5), 142-6
311-8 H:SEARCH IN
AH, 616-2
316-2 CH-2 R/P HEAD (Y)
AH, 616-1
316-3 CH-2 R/P HEAD (X)
316-1 CH-2 R/P HEAD (G)
SS (3/5), 142-11
311-3
Q301 DTC144EK EE/PB SW
R301 10k
R302 1k
C301 2.2 50V
R304 100k
D302 1S2837
R308 47k
R310 47k
IC301 LA7297 CH-2 LAU PB/EE AMP
301
C306 4.7 25V
C303 1000p
D306 1SS119
C307 0.01 :PT
RV301 22k
R309 330k
C311 1 50V
R313 22k
R314 5600
TP303 (CH-2 LAU PB LEVEL)
RV302 47k
R316 680
R318 1M
R322 10k
C314 10 16V
C326 0.1
R306 100k
R305 47k
D309 1S2837
Q324 2SC3326 REC HEAD VOL
R311 100
C309 47 16V
Q303 DTC144EK PB EQ CONT
R398 10k
RV301:CH-2 LAU PB FRQ RESP ADJ
RV302:CH-2 LAU PB LEVEL ADJ
Q305 2SC1623 BUFFER
R357 1k
R358 4700
R359 2200
TP304
C315 4.7 25V
R321 3300 :RN
FL301 LPF
R327 220k
IC302 CXA1102P CH-2 DOLBY PROCESS
302
Q329 2SC3326 MUTE
Q320 2SC3326 MUTE
R369 47k
R396 47k
C316 0.0033 :PT
R323 3k :RN
R324 390 :RN
E301
C317 4.7 25V
R326 43k :RN
C318 100 10V
R328 4700
C319 0.68 35V :TA
R365 10k
Q322 DTA144EK MUTE SW
A
B
C
D
E
F
G
H


IC203
M5201P
AFM/LAU SELECT AMP
IC204
M5201P
AFM/LAU SELECT AMP
IC205
MC14052BCP
(1/2)
CH-1/CH-2 SELECT
IC206
RC4558DD
(1/2)
HP AMP
Q217
2SC3326
MUTE
Q219
2SC3326
MUTE
Q319
2SC3326
MUTE
D303
1S2837
Q314
DTC144EK
Q313
DTA144EK
MUTE SW
D311
:NM
IC303
M5201P
AFM/LAU SELECT AMP
IC304
M5201P
AFM/LAU SELECT AMP
IC205
(2/2)
CH-1/CH-2 SELECT
IC206
(2/2)
HP AMP
Q317
2SC3326
MUTE
Q307
DTC144EK
TC SW
E202
E302
202
302
SC
DET
DOLBY PROCESS
IC401
RC78L09A
+9V REG
9V REG
OUT
IN
GND
POWER ON
MUTE CONT
Q422
DTA144EK
Q416
2SA812
D409
1S2837
D411
1SS119
D410
1SS119
12V
9V
LAU CH-1 PB OUT | 312-2 | (OPTION), 554-9
LAU CH-2 PB OUT | 312-6 | (OPTION), 554-5
L:DOLBY ON IN | 307-6 | SW-514B, 603-3
CH-1 HIFI (X) OUT | 317-1 | CP, 507-6
CH-1 AFM IN | 1/2
CH-1 NORMAL/HIFI (X) OUT | 317-3 | CP, 507-4
CH-1 MOUNITOR OUT (X) | 310-1 | CP, 502-9
CH-1 HEADPHONES OUT | 306-1 | HP, 651-3
CH-1 AU GND (G) OUT | 310-2 | CP, 502-8
GND | 307-3 | SW-574, 151-2
CH-1 HIFI GND | 317-2 | CP, 507-5
HEADPHONES OUT (G) | 306-3 | HP, 651-1
MONITOR SELECT (A) OUT | 310-7 | CP, 502-3
MONITOR SELECT (A) IN | 307-1 | SW-574, 151-3
MONITOR SELECT (B) IN | 307-2 | SW-574, 151-4
MONITOR SELECT (B) OUT | 310-8 | CP, 502-2
N.C | L:LIMITER ON IN | 307-7 | SW-514, 603-2
MUTE OUT | 310-9 | CP, 502-1
METER L:AFM/H:LAU IN | 307-4 | SW-574, 151-1
AU OUT L:AFM/H:LAU IN | 307-5 | SW-514, 603-4
CH-2 HIFI (X) OUT | 317-4 | CP, 507-3
CH-2 AFM IN | 1/2
CH-2 NORMAL/HIFI (X) OUT | 317-6 | CP, 507-1
CH-2 MONITOR OUT (X) | 310-3 | CP, 502-7
CH-2 HEADPHONES OUT | 306-2 | HP, 651-2
TC DATA GND | 312-1 | (OPTION), 554-10
GND | 312-8 | (OPTION), 554-3
CH-2 HIFI GND | 317-5 | CP, 507-2
N.C | — | 311-1 | SS (2/5), 142-13
N.C | — | 313-1 | SS (3/5), 140-7
REG 12V OUT | 310-5 | CP, 502-5
GND | 310-6 | CP, 502-4

① TP203 (I-4) PB mode



② TP204 (I-3) PB mode



Measurement Condition

PB mode: KRV-45HPS (NORMAL: 400Hz)

1

2

3

4

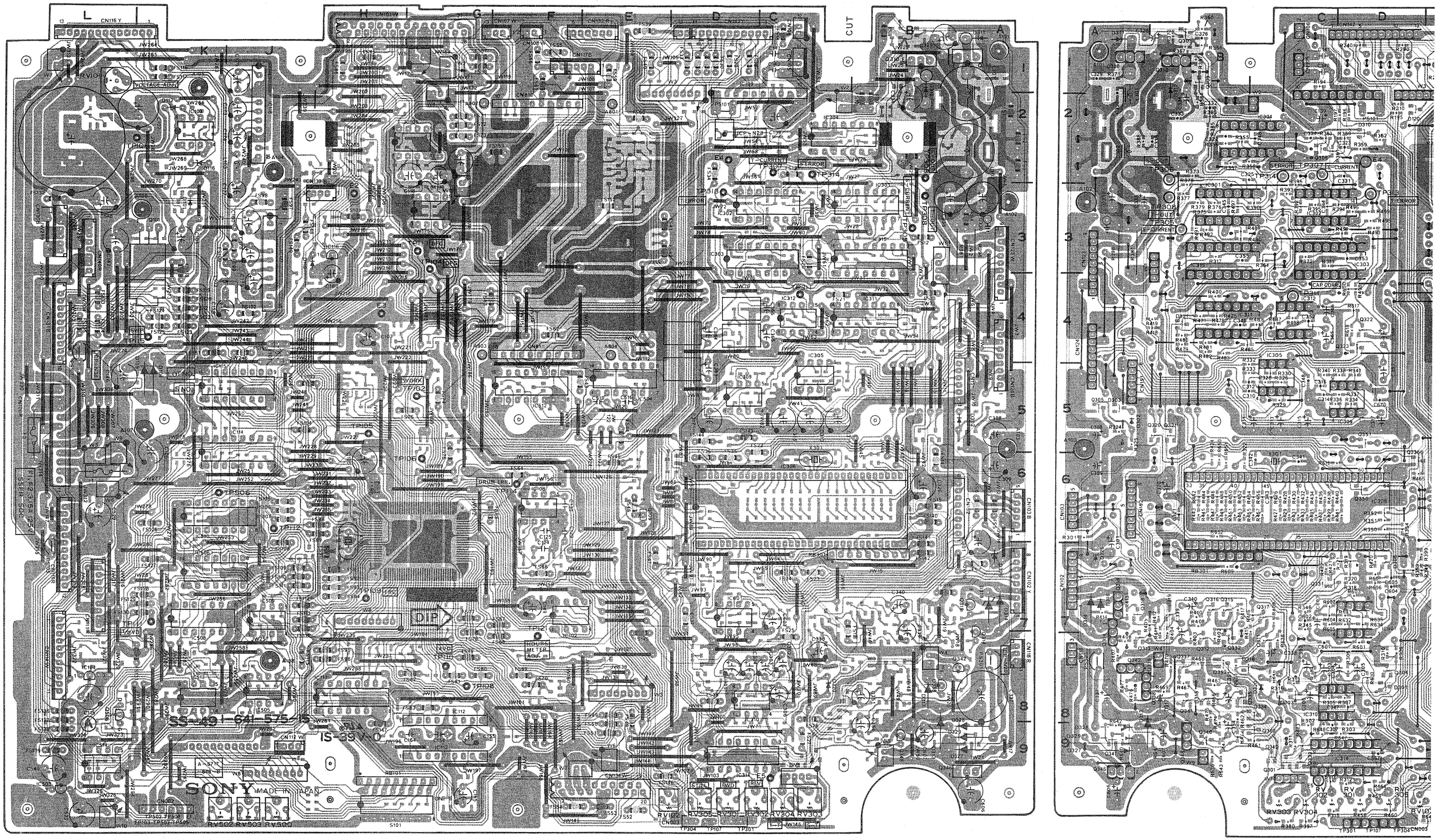
5

AU-179C (2/2)

1-643-488-21 (1)
SVP-9020

SS-49E ;   SERVO & SYSTEM CONTROL

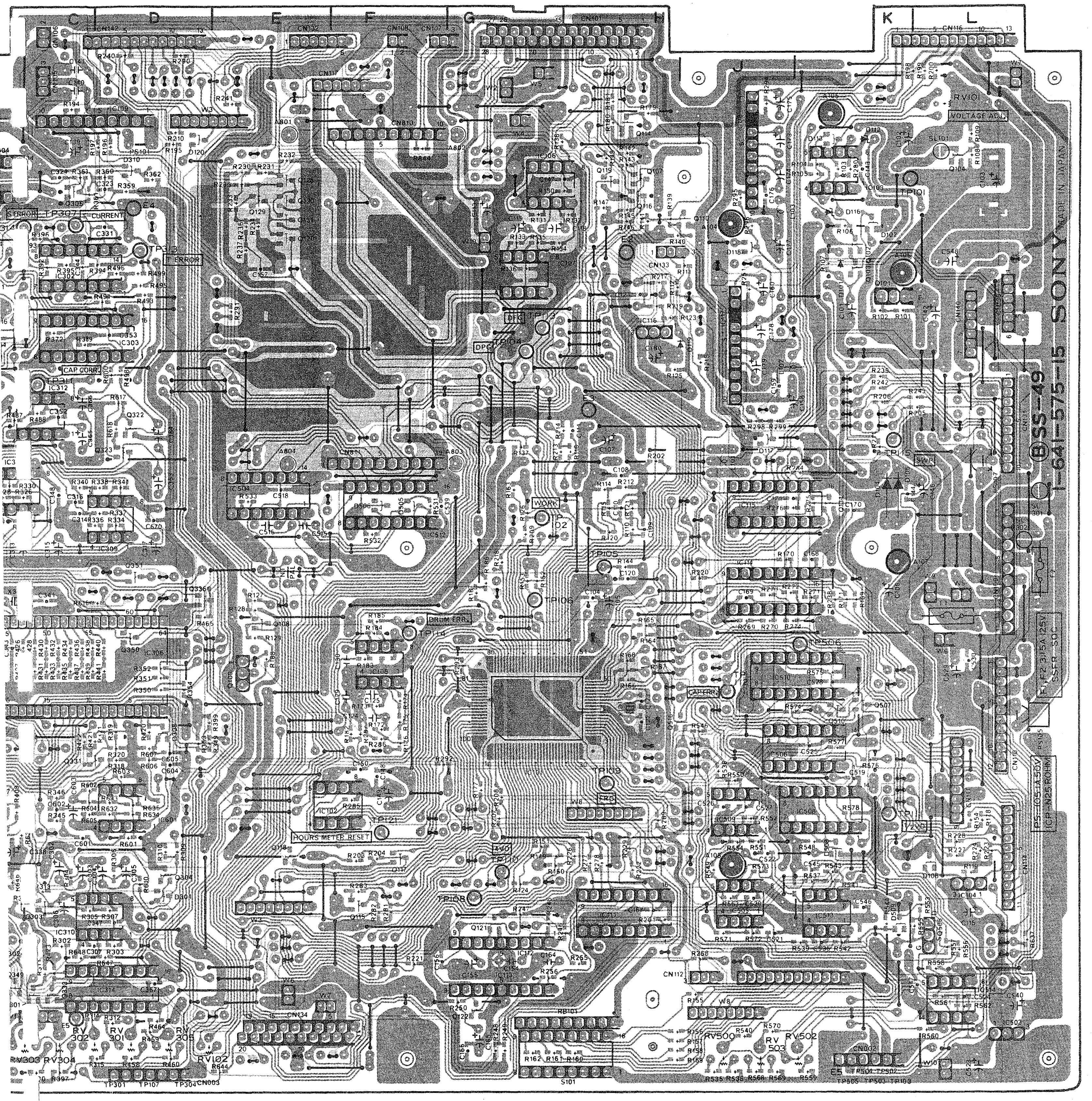
Serial No. 10581 and higher


CUT
SS-49 1-641-575-15
IS-39 7-0
SONY MADE IN JAPAN
DIP
VOLTAGE ADJ.
DRUM ERR.
HOURS METER ADJ
ERROR
CAP CURRENT
S-CURRENT
T-CURRENT
RV502 RV503 RV500
RV102 RV305 RV301 RV302 RV304 RV303

SS-49E — A SIDE —

1-641-575-15 (1)

SVP-9020



SS-49E — B SIDE —
1-641-575-15 (1)
SVP-9020

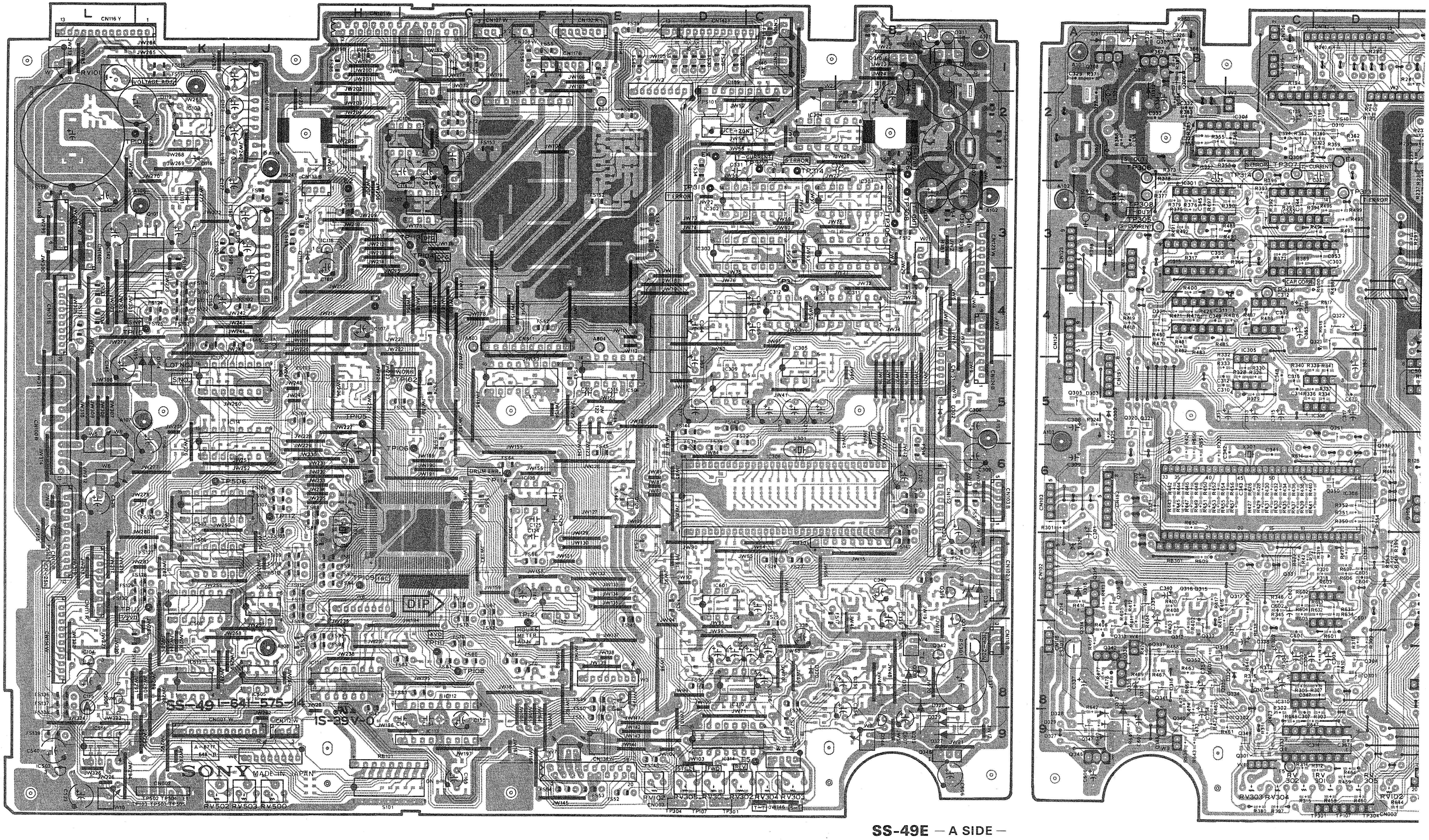
SS-49E (1-641-575-15)

CN1	K-9 *	D326	A-7	Q109	E-6	RV303	C-9
CN2	K-9	D327	A-9	Q110	J-2 *	RV304	C-9
E1		D328	A-9	Q114	H-2 *	RV305	D-9
TP103		D329	A-9	Q115	F-8 *	RV500	J-9
TP502		D505	F-5 *	Q116	H-2 *	RV502	K-9
TP503		D506	F-5 *	Q117	F-8 *	RV503	J-9
TP504		D508	K-8 *	Q118	E-8 *		
TP505		D509	K-8 *	Q119	H-2 *	S101	H-9
CN3	D-9			Q120	E-2 *		
TP107		E1	K-9	Q121	G-8 *	TP101	K-2
TP301		(CN2)		Q122	G-9 *	TP102	G-5
TP304		E2	H-3	Q128	E-2 *	TP103	K-9
CN100	L-5	E3	H-4	Q129	E-2 *	(CN2)	
CN101	H-1	E5	C-9	Q130	E-2 *	TP104	G-3
CN102	A-7			Q131	E-2 *	TP105	H-5
CN103	A-6	F1	L-6	Q134	K-5 *	TP106	G-6
CN105	C-1	F2	L-6	Q301	C-9 *	TP107	D-9
CN106	C-1			Q302	C-9 *	(CN3)	
CN107	F-1	IC101	G-7 *	Q303	C-8 *	TP108	G-8
CN108	F-1	IC102	F-8	Q304	D-8 *	TP109	H-7
CN110	L-7	IC103	K-2	Q305	A-5 *	TP110	G-8
CN111	L-7	IC104	L-8	Q306	C-2 *	TP111	L-7
CN112	J-9	IC106	G-2	Q307	B-1 *	TP112	J-6
CN114	L-8	IC107	G-3	Q308	A-1	TP113	G-3
CN116	L-1	IC108	F-6	Q309	B-1 *	TP114	F-6
CN117	F-1	IC109	D-1	Q310	B-1	TP115	K-4
CN118	A-8	IC111	H-8	Q311	C-8 *	TP121	F-7
CN123	A-3	IC113	G-9	Q312	B-8 *	TP301	D-9
CN124	A-5	IC114	J-5	Q313	A-8 *	(CN3)	
CN130	L-3	IC115	K-5	Q314	A-8	TP304	D-9
CN131	L-4	IC116	H-3	Q315	B-7 *	(CN3)	
CN132	E-1	IC117	J-3	Q316	B-7 *	TP305	B-3
CN133	J-3	IC301	B-3	Q317	C-7 *	TP306	B-2
CN134	E-9	IC302	D-3	Q318	A-7 *	TP307	C-2
CN140	L-3	IC303	D-3	Q319	A-7	TP308	B-3
CN142	D-1	IC304	C-2	Q320	A-5 *	TP311	C-4
CN151	A-5	IC305	C-4	Q321	B-5 *	TP313	D-3
CN153	P-1	IC306	C-6	Q322	D-4 *	TP314	C-2
CN154	P-1	IC307	P-1	Q323	D-4 *	TP502	K-9
CN810	F-2	IC308	P-1	Q331	C-7 *	(CN2)	
CN811	F-4	IC309	D-5	Q332	B-8 *	TP503	K-9
		IC310	D-8	Q333	C-9 *	(CN2)	
D101	K-3	IC311	B-4	Q334	C-8 *	TP504	K-9
D102	K-2 *	IC312	C-4	Q335	C-8 *	(CN2)	
D104	K-5	IC314	D-9	Q336	D-6 *	TP505	K-9
D105	K-4	IC315	B-3	Q337	B-8 *	(CN2)	
D108	L-8 *	IC503	L-9	Q338	A-8	TP506	J-6
D112	K-2	IC504	E-5	Q340	B-9 *		
D113	K-2 *	IC505	J-8	Q341	B-8 *	X101	H-6
D116	K-2	IC506	K-7	Q342	A-8	X301	C-5
D117	J-4 *	IC508	K-8	Q346	A-9		
D119	J-3	IC509	J-7	Q347	A-9 *		
D120	D-2 *	IC510	K-6	Q348	B-9		
D301	D-8 *	IC512	F-5	Q349	C-9 *		
D302	A-5	IC513	K-8	Q350	D-6 *		
D303	A-5 *	IC514	L-9	Q351	D-5 *		
D308	D-7 *	IC601	D-7	Q352	D-8 *		
D310	D-2 *			Q506	L-8		
D311	A-1	PS101	D-2	Q507	K-6 *		
D312	B-1	PS105	L-7 *	Q510	K-7 *		
D313	A-9	PS107	L-5	Q516	H-7 *		
D314	A-7	PS301	A-8				
D315	B-8 *			RB101	H-9		
D316	B-8 *	Q101	K-3	RB301	C-7		
D317	D-8	Q102	K-3 *				
D318	A-7	Q103	K-3 *	RV101	L-1		
D319	B-7 *	Q104	L-2 *	RV102	E-9		
D320	C-8	Q107	H-2 *	RV301	D-9		
D321	B-4 *	Q108	E-6 *	RV302	D-9		

* mark; B SIDE mount

SS-49E; SERVO & SYSTEM CONTROL

Serial No. 10001-10580


SONY
MADE IN JAPAN
SS-49 1-641-575-14
VOLTAGE ADJ
DRUM ERR
HOURS METER ADJ
DIP
T-CURRENT
S-ERROR
T-ERROR
S-CURRENT
CAP CORR
RV502
RV503
RV500
RV102
RV305
RV301
RV302
RV304
RV303
CN003
TP304
TP107
TP301
A
B
C
D
E
F
G
H
J
K
L
1
2
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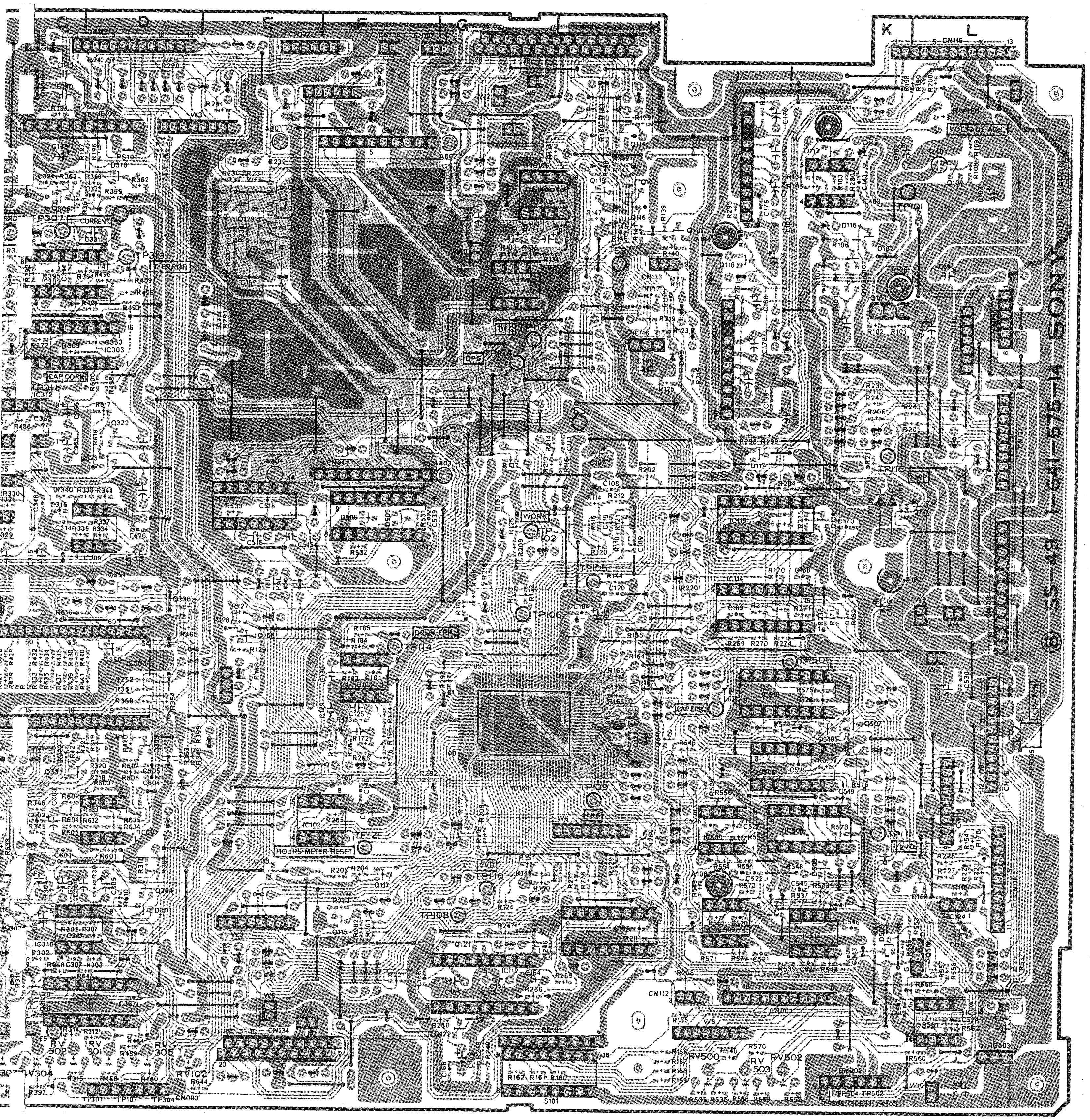
9

SS-49E – A SIDE –

1-641-575-14 (1)

SVP-9020



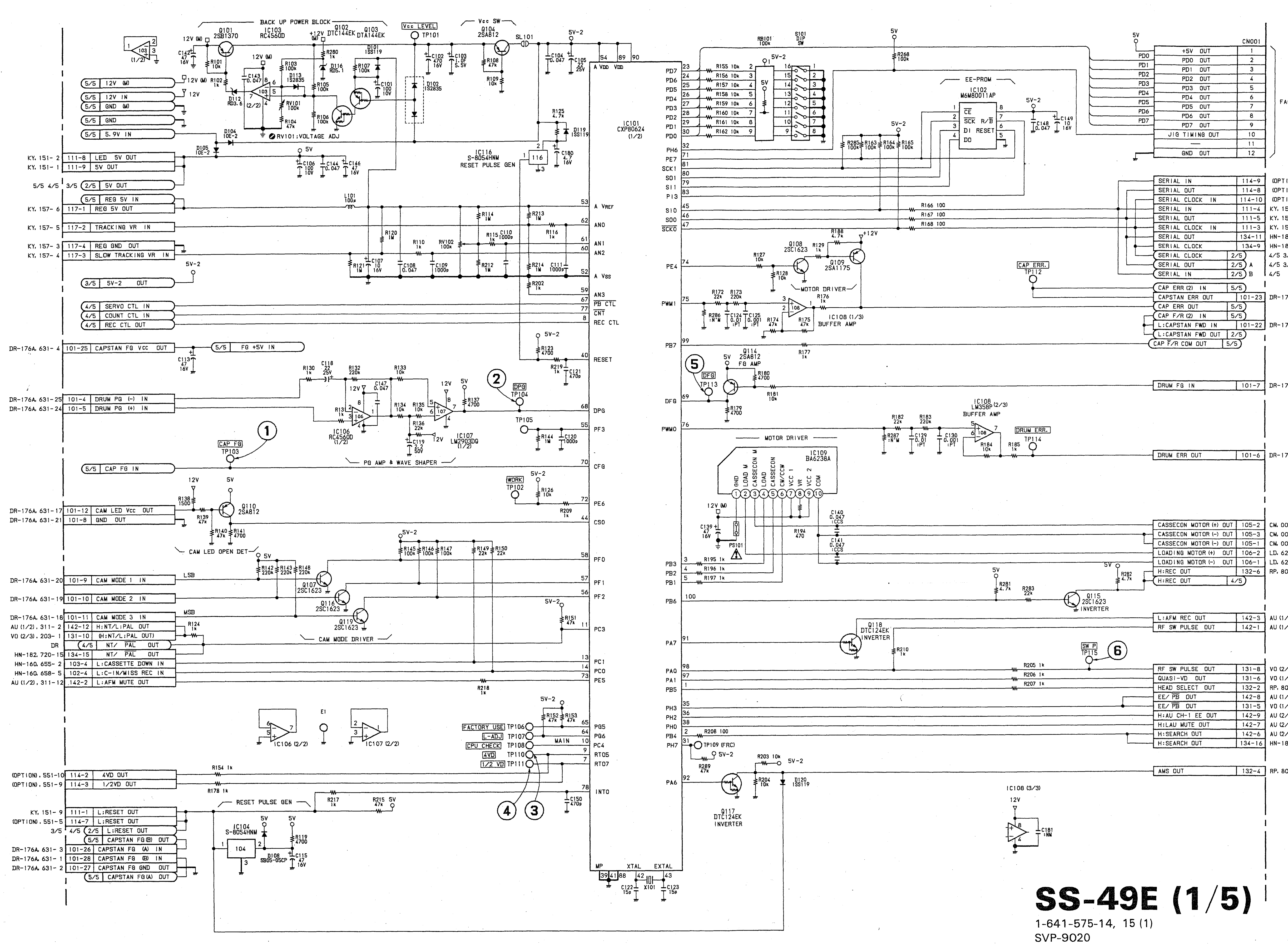
SS-49E — B SIDE —
1-641-575-14 (1)
SVP-9020

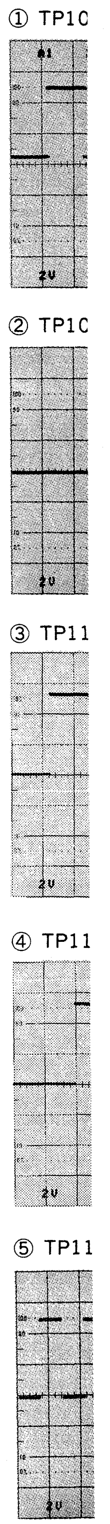
SS-49E (1-641-575-14)

CN1	K-9	D327	A-9	Q117	F-8 *	RV503	J-9
CN2	K-9	D328	A-9	Q118	E-8 *		
E1		D329	A-9	Q119	H-2 *	S101	H-9
TP103		D505	F-5 *	Q120	E-2 *		
TP502		D506	F-5 *	Q121	G-8 *	TP101	K-2
TP503		D508	K-8 *	Q122	G-9 *	TP102	G-5
TP504		D509	K-8 *	Q128	E-2 *	TP103	K-9
TP505				Q129	E-2 *	(CN2)	
CN3	D-9	E1	K-9	Q130	E-2 *	TP104	G-3
TP107		(CN2)		Q131	E-2 *	TP105	H-5
TP301		E2	H-3	Q134	K-5 *	TP106	G-6
TP304		E3	H-4	Q301	C-9 *	TP107	D-9
CN100	L-5	E5	C-9	Q302	C-9 *	(CN3)	
CN101	H-1			Q303	C-8 *	TP108	G-8
CN102	A-7	IC101	G-7 *	Q304	D-8 *	TP109	H-7
CN103	A-6	IC102	F-8	Q305	A-5 *	TP110	G-8
CN105	C-1	IC103	K-2	Q306	C-2 *	TP111	L-7
CN106	C-1	IC104	L-8	Q307	B-1 *	TP112	J-6
CN107	F-1	IC106	G-2	Q308	A-1	TP113	G-3
CN108	F-1	IC107	G-3	Q309	B-1 *	TP114	F-6
CN110	L-7	IC108	F-6	Q310	B-1	TP115	K-4
CN111	L-7	IC109	D-1	Q311	C-8 *	TP121	F-7
CN112	J-9	IC111	H-8	Q312	B-8 *	TP301	D-9
CN114	L-8	IC113	G-9	Q313	A-8 *	(CN3)	
CN116	L-1	IC114	J-5	Q314	A-8	TP304	D-9
CN117	F-1	IC115	K-5	Q315	B-7 *	(CN3)	
CN118	A-8	IC116	H-3	Q316	B-7 *	TP305	B-3
CN123	A-3	IC117	J-3	Q317	C-7 *	TP306	B-2
CN124	A-5	IC301	B-3	Q318	A-7 *	TP307	C-2
CN130	L-3	IC302	D-3	Q319	A-7	TP308	B-3
CN131	L-4	IC303	D-3	Q320	A-5 *	TP311	C-4
CN132	E-1	IC304	C-2	Q321	B-5 *	TP313	D-3
CN133	J-3	IC305	C-4	Q322	D-4 *	TP314	C-2
CN134	E-9	IC306	C-6	Q323	D-4 *	TP502	K-9
CN140	L-3	IC307	P-1	Q331	C-7 *	(CN2)	
CN142	D-1	IC308	P-1	Q332	B-8 *	TP503	K-9
CN151	A-5	IC309	D-5	Q333	C-9 *	(CN2)	
CN153	P-1	IC310	D-8	Q334	C-8 *	TP504	K-9
CN154	P-1	IC311	B-4	Q335	C-8 *	(CN2)	
CN810	F-2	IC312	C-4	Q336	D-6 *	TP505	K-9
CN811	F-4	IC314	D-9	Q337	B-8 *	(CN2)	
		IC315	B-3	Q338	A-8	TP506	J-6
D101	K-3	IC503	L-9	Q340	B-9 *		
D102	K-2 *	IC504	E-5	Q341	B-8 *	X101	H-6
D104	K-5	IC505	J-8	Q342	A-8	X301	C-5
D105	K-4	IC506	K-7	Q346	A-9		
D108	L-8 *	IC508	K-8	Q347	A-9 *		
D112	K-2	IC509	J-7	Q348	B-9		
D113	K-2 *	IC510	K-6	Q349	C-9 *		
D116	K-2	IC512	F-5	Q350	D-6 *		
D117	J-4 *	IC513	K-8	Q351	D-5 *		
D119	J-3	IC514	L-9	Q352	D-8 *		
D301	D-8 *	IC601	D-7	Q506	L-8		
D302	A-5			Q507	K-6 *		
D303	A-5 *	PS101	D-2	Q510	K-7 *		
D308	D-7 *	PS105	L-7 *	Q516	H-7 *		
D310	D-2 *	PS301	A-8				
D311	A-1			RB101	H-9		
D312	B-1	Q101	K-3	RB301	C-7		
D313	A-9	Q102	K-3 *				
D314	A-7	Q103	K-3 *	RV101	L-1		
D315	B-8 *	Q104	L-2 *	RV102	E-9		
D316	B-8 *	Q107	H-2 *	RV301	D-9		
D317	D-8	Q108	E-6 *	RV302	D-9		
D318	A-7	Q109	E-6	RV303	C-9		
D319	B-7 *	Q110	J-2 *	RV304	C-9		
D320	C-8	Q114	H-2 *	RV305	D-9		
D321	B-4 *	Q115	F-8 *	RV500	J-9		
D326	A-7	Q116	H-2 *	RV502	K-9		

* mark ; B SIDE mount

SS-49E (1/5); DRUM/CAPSTAN SERVO CONTROL
VIDEO/AUDIO CONTROL SIGNAL GENERATOR


BACK UP POWER BLOCK
IC103 RC4560D
Q101 2SB1370
Q102 DTC144EK
Q103 DTA144EK
Vcc LEVEL TP101
Vcc SW
Q104 2SA812
SL101
RV101:VOLTAGE ADJ
IC116 S-8054HNM RESET PULSE GEN
IC101 CXP80624 (1/2)
S101 DIP SW
RB101 100k
EE-PROM IC102 M6M80011AP
CN001
FACTORY USE
+5V OUT
PD0 OUT
PD1 OUT
PD2 OUT
PD3 OUT
PD4 OUT
PD5 OUT
PD6 OUT
PD7 OUT
JIG TIMING OUT
GND OUT
12V (M)
12V IN
GND (M)
GND
5.9V IN
LED 5V OUT
5V OUT
REG 5V IN
REG 5V OUT
TRACKING VR IN
REG GND OUT
SLOW TRACKING VR IN
5V-2 OUT
SERVO CTL IN
COUNT CTL IN
REC CTL OUT
CAPSTAN FG Vcc OUT
FG +5V IN
DRUM PG (-) IN
DRUM PG (+) IN
CAP FG TP103
CAP FG IN
PG AMP & WAVE SHAPER
IC106 RC4560D (1/2)
IC107 LM2903DQ (1/2)
DPG TP104
TP105
CAM LED Vcc OUT
Q110 2SA812
CAM LED OPEN DET
CAM MODE 1 IN
CAM MODE 2 IN
CAM MODE 3 IN
LSB
MSB
Q107 2SC1623
Q116 2SC1623
Q112 2SC1623
CAM MODE DRIVER
H:NT/L:PAL OUT
NT/ PAL OUT
L:CASSETTE DOWN IN
L:C-IN/MISS REC IN
L:AFM MUTE OUT
WORK TP102
FACTORY USE TP106
L-ADJ TP107
CPU CHECK TP108
4VD TP110
1/2 VD TP111
MAIN
4VD OUT
1/2VD OUT
L:RESET OUT
RESET PULSE GEN
IC104 S-8054HNM
CAPSTAN FG (B) OUT
CAPSTAN FG (A) IN
CAPSTAN FG (B) IN
CAPSTAN FG GND OUT
CAPSTAN FG (A) OUT
D108 SB05-05CP
XTAL EXTAL
X101
Q108 2SC1623
Q109 2SA1175
MOTOR DRIVER
IC108 (1/3) BUFFER AMP
CAP ERR TP112
DFG TP113
Q114 2SA812 FG AMP
IC108 LM358P (2/3) BUFFER AMP
DRUM ERR TP114
IC109 BA6238A
PS101
SERIAL IN
SERIAL OUT
SERIAL CLOCK IN
SERIAL CLOCK
CAP ERR (2) IN
CAPSTAN ERR OUT
CAP ERR OUT
CAP F/R (2) IN
L:CAPSTAN FWD IN
L:CAPSTAN FWD OUT
CAP F/R COM OUT
DRUM FG IN
DRUM ERR OUT
CASSECON MOTOR (+) OUT
CASSECON MOTOR (-) OUT
LOADING MOTOR (+) OUT
LOADING MOTOR (-) OUT
H:REC OUT
Q115 2SC1623 INVERTER
Q118 DTC124EK INVERTER
L:AFM REC OUT
RF SW PULSE OUT
SW P TP115
QUASI-VD OUT
HEAD SELECT OUT
EE/ PB OUT
H:AU CH-1 EE OUT
H:LAU MUTE OUT
H:SEARCH OUT
TP109 (FRC)
AMS OUT
Q117 DTC124EK INVERTER
D120 1SS119
IC108 (3/3)
①
②
③
④
⑤
⑥

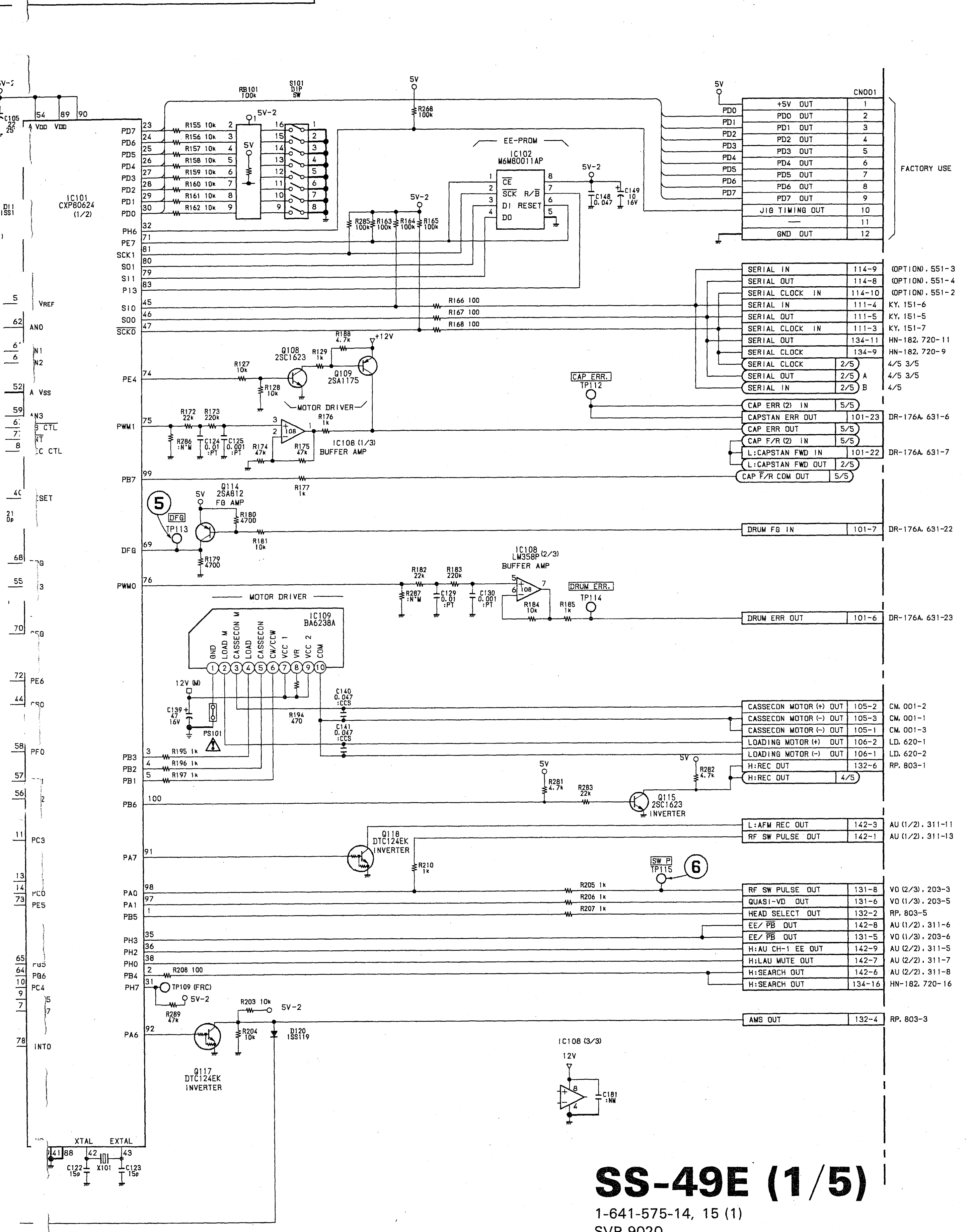


NOTE:
The ⚠-n
Replace

SS-49E (1/5)

1-641-575-14, 15 (1)
SVP-9020

A B C D E F G H


IC101
CXP80624
(1/2)
PD7
PD6
PD5
PD4
PD3
PD2
PD1
PD0
PH6
PE7
SCK1
SO1
SI1
PI3
SI0
SO0
SCK0
PE4
PWM1
PB7
DFG
PWM0
PB3
PB2
PB1
PB6
PA7
PA0
PA1
PB5
PH3
PH2
PH0
PB4
PH7
PA6
VREF
AN0
VSS
XTAL
EXTAL
RB101
100k
S101
DIP
SW
5V-2
R155 10k
R156 10k
R157 10k
R158 10k
R159 10k
R160 10k
R161 10k
R162 10k
R268
100k
EE-PROM
IC102
M6M80011AP
CE
SCK R/B
DI RESET
DO
C148
0.047
C149
10
16V
R285 100k
R163 100k
R164 100k
R165 100k
CN001
+5V OUT
PD0 OUT
PD1 OUT
PD2 OUT
PD3 OUT
PD4 OUT
PD5 OUT
PD6 OUT
PD7 OUT
JIG TIMING OUT
GND OUT
FACTORY USE
R166 100
R167 100
R168 100
SERIAL IN | 114-9 | (OPTION). 551-3
SERIAL OUT | 114-8 | (OPTION). 551-4
SERIAL CLOCK IN | 114-10 | (OPTION). 551-2
SERIAL IN | 111-4 | KY. 151-6
SERIAL OUT | 111-5 | KY. 151-5
SERIAL CLOCK IN | 111-3 | KY. 151-7
SERIAL OUT | 134-11 | HN-182. 720-11
SERIAL CLOCK | 134-9 | HN-182. 720-9
SERIAL CLOCK | 2/5 | 4/5 3/5
SERIAL OUT | 2/5 | A | 4/5 3/5
SERIAL IN | 2/5 | B | 4/5
CAP ERR (2) IN | 5/5
CAPSTAN ERR OUT | 101-23 | DR-176A. 631-6
CAP ERR OUT | 5/5
CAP F/R (2) IN | 5/5
L:CAPSTAN FWD IN | 101-22 | DR-176A. 631-7
L:CAPSTAN FWD OUT | 2/5
CAP F/R COM OUT | 5/5
DRUM FG IN | 101-7 | DR-176A. 631-22
DRUM ERR OUT | 101-6 | DR-176A. 631-23
CASSECON MOTOR (+) OUT | 105-2 | CM. 001-2
CASSECON MOTOR (-) OUT | 105-3 | CM. 001-1
CASSECON MOTOR (-) OUT | 105-1 | CM. 001-3
LOADING MOTOR (+) OUT | 106-2 | LD. 620-1
LOADING MOTOR (-) OUT | 106-1 | LD. 620-2
H:REC OUT | 132-6 | RP. 803-1
H:REC OUT | 4/5
L:AFM REC OUT | 142-3 | AU (1/2). 311-11
RF SW PULSE OUT | 142-1 | AU (1/2). 311-13
RF SW PULSE OUT | 131-8 | VO (2/3). 203-3
QUASI-VD OUT | 131-6 | VO (1/3). 203-5
HEAD SELECT OUT | 132-2 | RP. 803-5
EE/PB OUT | 142-8 | AU (1/2). 311-6
EE/PB OUT | 131-5 | VO (1/3). 203-6
H:AU CH-1 EE OUT | 142-9 | AU (2/2). 311-5
H:LAU MUTE OUT | 142-7 | AU (2/2). 311-7
H:SEARCH OUT | 142-6 | AU (2/2). 311-8
H:SEARCH OUT | 134-16 | HN-182. 720-16
AMS OUT | 132-4 | RP. 803-3
Q108
2SC1623
Q109
2SA1175
R188 4.7k
R127 10k
R128 10k
R129 1k
+12V
MOTOR DRIVER
CAP ERR.
TP112
R172 22k
R173 220k
R176 1k
R286 :N'M
C124 0.01 :PT
C125 0.001 :PT
R174 47k
R175 47k
IC108 (1/3)
BUFFER AMP
R177 1k
⑤
DFG
TP113
Q114
2SA812
FG AMP
R180 4700
R181 10k
R179 4700
IC108
LM358P (2/3)
BUFFER AMP
R182 22k
R183 220k
R287 :N'M
C129 0.01 :PT
C130 0.001 :PT
R184 10k
R185 1k
DRUM ERR.
TP114
MOTOR DRIVER
IC109
BA6238A
GND
LOAD M
CASSECON M
LOAD
CASSECON
CW/CCW
VCC 1
VR
VCC 2
COM
12V (M)
C139 47 16V
PS101
R194 470
C140 0.047 :CCS
C141 0.047 :CCS
R195 1k
R196 1k
R197 1k
R281 4.7k
R283 22k
R282 4.7k
Q115
2SC1623
INVERTER
Q118
DTC124EK
INVERTER
R210 1k
SW P
TP115
⑥
R205 1k
R206 1k
R207 1k
R208 100
TP109 (FRC)
R289 47k
R203 10k
5V-2
R204 10k
D120
1SS119
Q117
DTC124EK
INVERTER
IC108 (3/3)
12V
C181 :NM
C122 15p
X101
C123 15p
C105
D11
1SS1

SS-49E (1/5)

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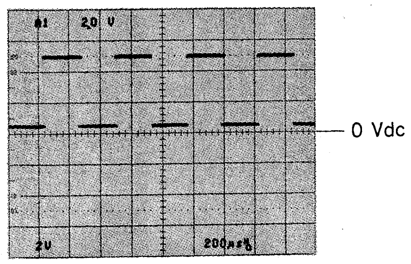
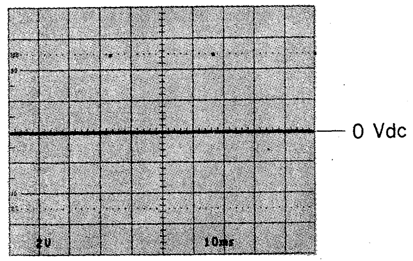
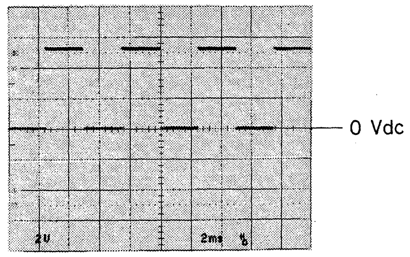
① TP103 (K-9) PB mode



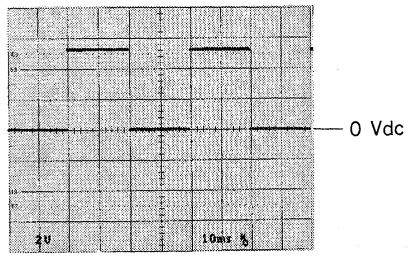
② TP104 (G-3) PB mode



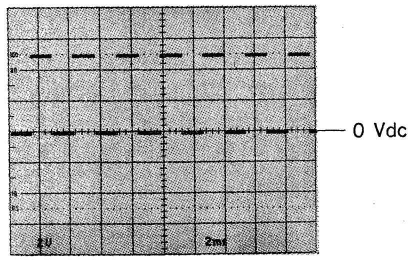
③ TP110 (G-8) PB mode



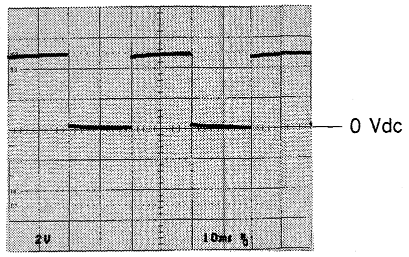
④ TP111 (L-7) PB mode



⑤ TP113 (G-3) PB mode



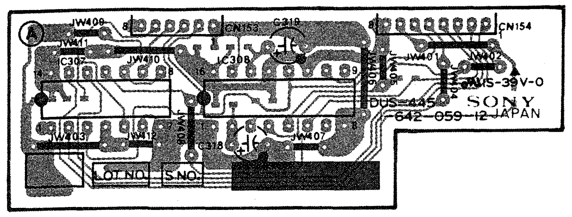
⑥ TP115 (K-4) PB mode



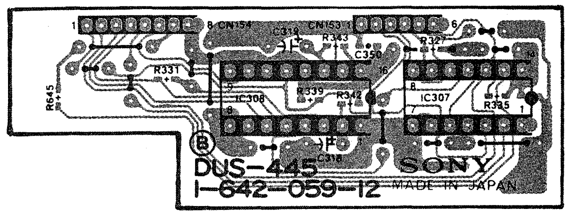
Measurement Condition
PB mode: KRV-45HPS

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

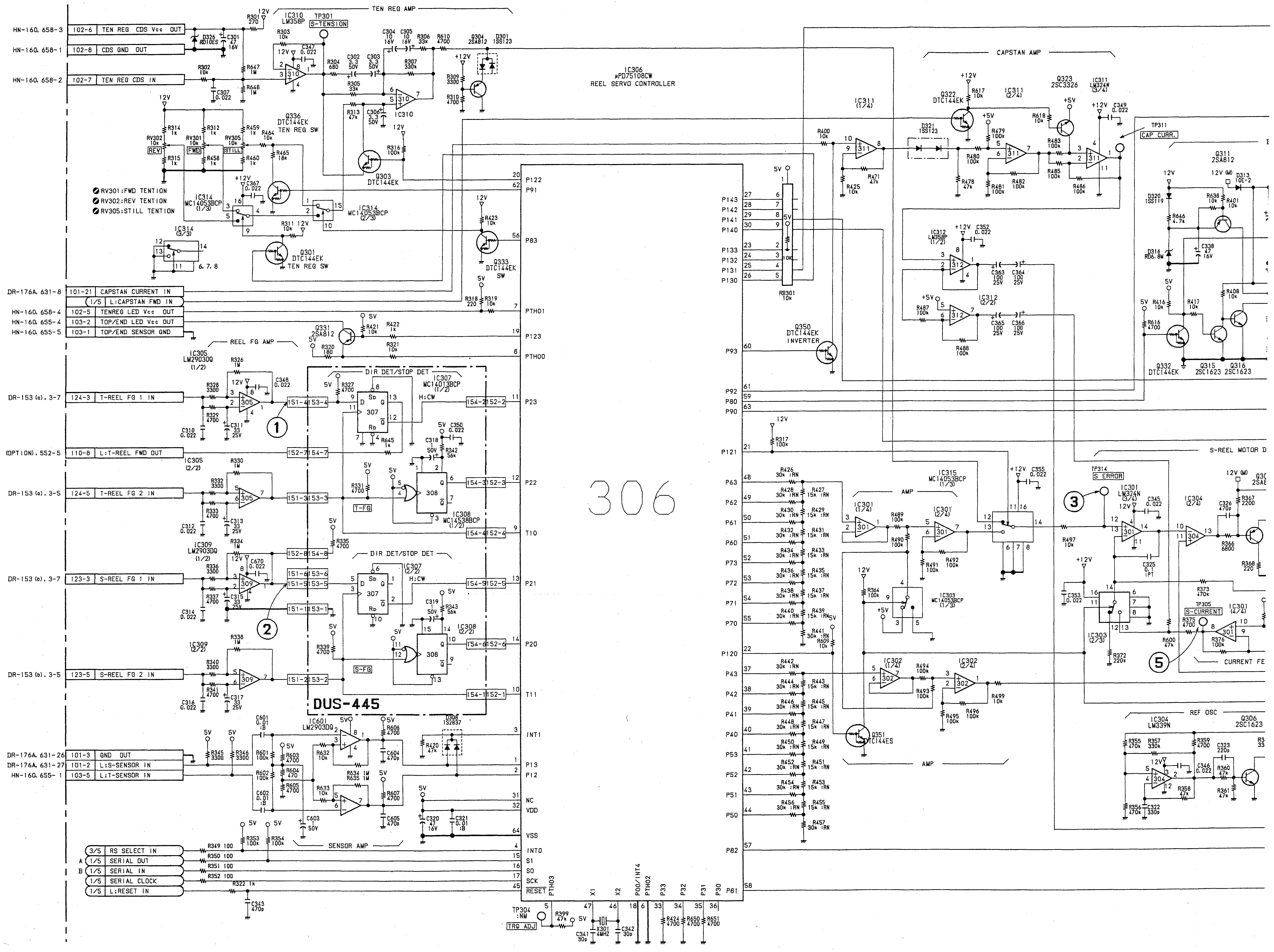
SS-49E (2/5); REEL SERVO CONTROL
DUS-445; DIRECTION AND STOP DETECT


CN153
CN154
JW408
JW410
JW411
IC308
IC310
DUS-445
SONY
642-059-12 JAPAN
LOT NO.
S.NO.

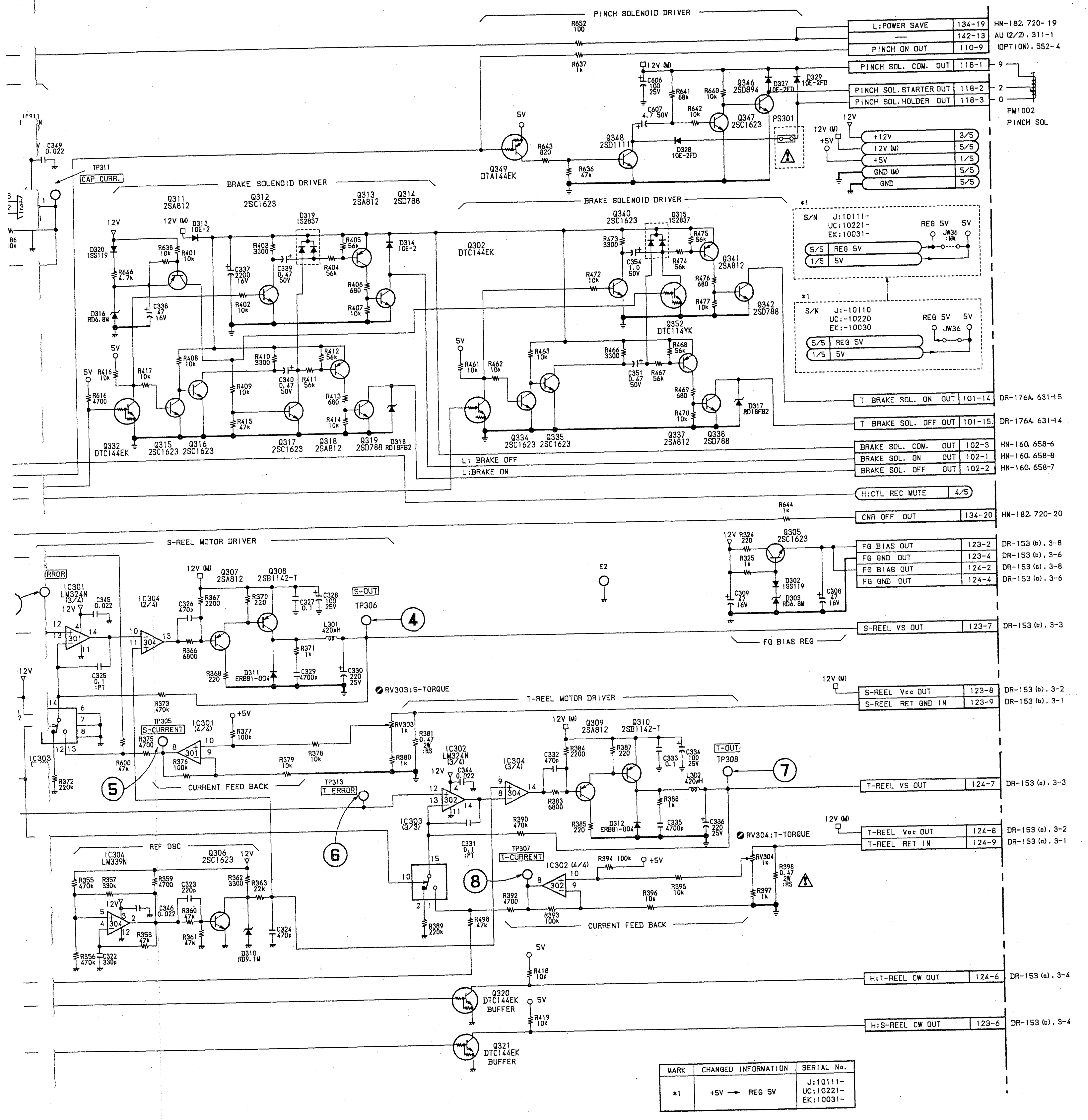
DUS-445 — A SIDE —
1-642-059-12 (1)
SVP-9020


CN154
CN153
R331
IC306
IC307
R645
DUS-445
SONY
1-642-059-12
MADE IN JAPAN

DUS-445 — B SIDE —
1-642-059-12 (1)
SVP-9020


TEN REG AMP
HN-160, 658-3
HN-160, 658-1
HN-160, 658-2
102-6 TEN REG CDS Vcc OUT
102-8 CDS GND OUT
102-7 TEN REG CDS IN
IC310 LM358P
TP301 S-TENSION
IC306 μPD75108CW REEL SERVO CONTROLLER
RV301:FWD TENTION
RV302:REV TENTION
RV305:STILL TENTION
IC314 MC14053BCP
Q336 DTC144EK TEN REG SW
Q303 DTC144EK
Q301 DTC144EK TEN REG SW
Q333 DTC144EK SW
DR-176A, 631-8
101-21 CAPSTAN CURRENT IN
1/5 L:CAPSTAN FWD IN
102-5 TENREG LED Vcc OUT
103-2 TOP/END LED Vcc OUT
103-1 TOP/END SENSOR GND
REEL FG AMP
Q331 2SA812
IC305 LM2903DQ
DIR DET/STOP DET
IC307 MC14013BCP
H:CW
DR-153 (c), 3-7
124-3 T-REEL FG 1 IN
(OPTION), 552-5
110-8 L:T-REEL FWD OUT
DR-153 (c), 3-5
124-5 T-REEL FG 2 IN
IC308 MC14538BCP
T-FG
IC309 LM2903DQ
DR-153 (b), 3-7
123-3 S-REEL FG 1 IN
DR-153 (b), 3-5
123-5 S-REEL FG 2 IN
S-FG
DUS-445
IC601 LM2903DQ
D306 1S2837
DR-176A, 631-26
DR-176A, 631-27
HN-160, 655-1
101-3 GND OUT
101-2 L:S-SENSOR IN
103-5 L:T-SENSOR IN
SENSOR AMP
3/5 RS SELECT IN
1/5 SERIAL OUT
1/5 SERIAL IN
1/5 SERIAL CLOCK
1/5 L:RESET IN
TP304 :NM TRQ ADJ
X301 4MHz
306
P122
P91
P83
PTHO1
P123
PTHO0
P23
P22
T10
P21
P20
T11
INT1
P13
P12
NC
VDD
VSS
INT0
SI
SO
SCK
RESET
PTHO3
X1
X2
P00/INT4
PTHO2
P33
P32
P31
P30
P81
P143
P142
P141
P140
P133
P132
P131
P130
P93
P92
P80
P90
P121
P63
P62
P61
P60
P73
P72
P71
P70
P120
P43
P42
P41
P40
P53
P52
P51
P50
P82
RB301
Q350 DTC144EK INVERTER
IC311
D321 1SS123
CAPSTAN AMP
Q322 DTC144EK
Q323 2SC3326
IC311 LM324N
TP311 CAP CURR.
Q311 2SA812
D320 1SS119
D316 RD6.8M
Q332 DTC144EK
Q315 2SC1623
Q316 2SC1623
IC312 LM358P
IC315 MC14053BCP
TP314 S ERROR
IC301 LM324N
IC304
S-REEL MOTOR D
AMP
IC303 MC14053BCP
IC302
Q351 DTC144ES
TP305 S-CURRENT
CURRENT FE
REF OSC
IC304 LM339N
Q306 2SC1623
①
②
③
⑤

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


PINCH SOLENOID DRIVER
L:POWER SAVE 134-19 HN-182, 720-19
142-13 AU (2/2), 311-1
PINCH ON OUT 110-9 (OPTION), 552-4
PINCH SOL. COM. OUT 118-1
PINCH SOL. STARTER OUT 118-2
PINCH SOL. HOLDER OUT 118-3
PM1002 PINCH SOL
PS301
BRAKE SOLENOID DRIVER
TP311 CAP CURR.
T BRAKE SOL. ON OUT 101-14 DR-176A, 631-15
T BRAKE SOL. OFF OUT 101-15 DR-176A, 631-14
L: BRAKE OFF
L:BRAKE ON
BRAKE SOL. COM. OUT 102-3 HN-160, 658-6
BRAKE SOL. ON OUT 102-1 HN-160, 658-6
BRAKE SOL. OFF OUT 102-2 HN-160, 658-7
H:CTL REC MUTE 4/5
CNR OFF OUT 134-20 HN-182, 720-20
S/N J:10111- UC:10221- EK:10031- REG 5V 5V
S/N J:-10110 UC:-10220 EK:-10030 REG 5V 5V
S-REEL MOTOR DRIVER
FG BIAS OUT 123-2 DR-153 (b), 3-8
FG GND OUT 123-4 DR-153 (b), 3-6
FG BIAS OUT 124-2 DR-153 (a), 3-8
FG GND OUT 124-4 DR-153 (a), 3-6
FG BIAS REG
S-OUT TP306
S-REEL VS OUT 123-7 DR-153 (b), 3-3
RV303:S-TORQUE
T-REEL MOTOR DRIVER
S-REEL Vcc OUT 123-8 DR-153 (b), 3-2
S-REEL RET GND IN 123-9 DR-153 (b), 3-1
S-CURRENT TP305
CURRENT FEED BACK
TP313 T ERROR
T-OUT TP308
T-REEL VS OUT 124-7 DR-153 (a), 3-3
T-REEL Vcc OUT 124-8 DR-153 (a), 3-2
T-REEL RET IN 124-9 DR-153 (a), 3-1
RV304:T-TORQUE
REF OSC
TP307 T-CURRENT
CURRENT FEED BACK
H:T-REEL CW OUT 124-6 DR-153 (a), 3-4
H:S-REEL CW OUT 123-6 DR-153 (b), 3-4
Q320 DTC144EK BUFFER
Q321 DTC144EK BUFFER
①
②
③
④
⑤
⑥
⑦
⑧

MARK	CHANGED INFORMATION	SERIAL No.
*1	+5V → REG 5V	J:10111- UC:10221- EK:10031-

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DUS-445

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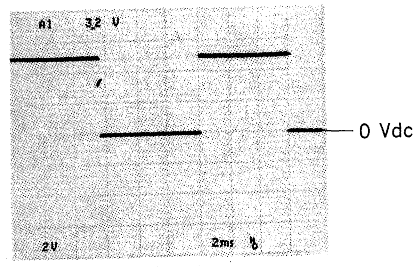
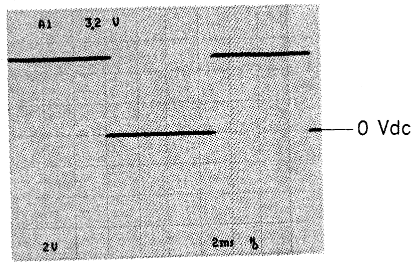
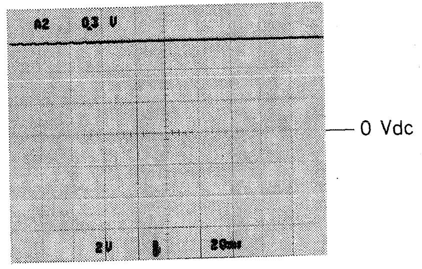
① CN151-4pin (A-5) PB mode



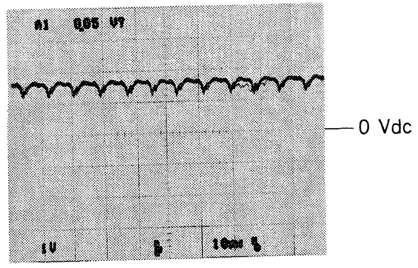
② CN151-5pin (A-5) PB mode



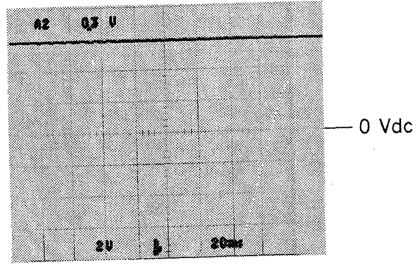
③ TP314 (C-2) PB mode



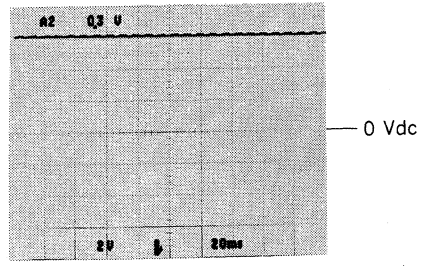
④ TP306 (B-2) PB mode



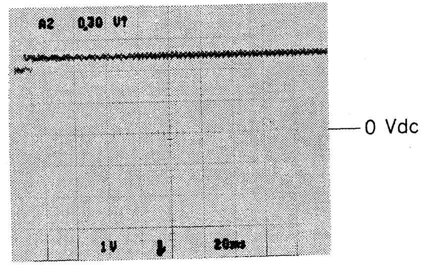
⑤ TP305 (B-3) PB mode



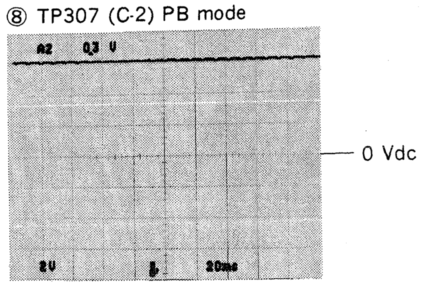
⑥ TP313 (D-3) PB mode



⑦ TP308 (B-3) PB mode



⑧ TP307 (C-2) PB mode



Measurement Condition
PB mode: KRV-45HPS

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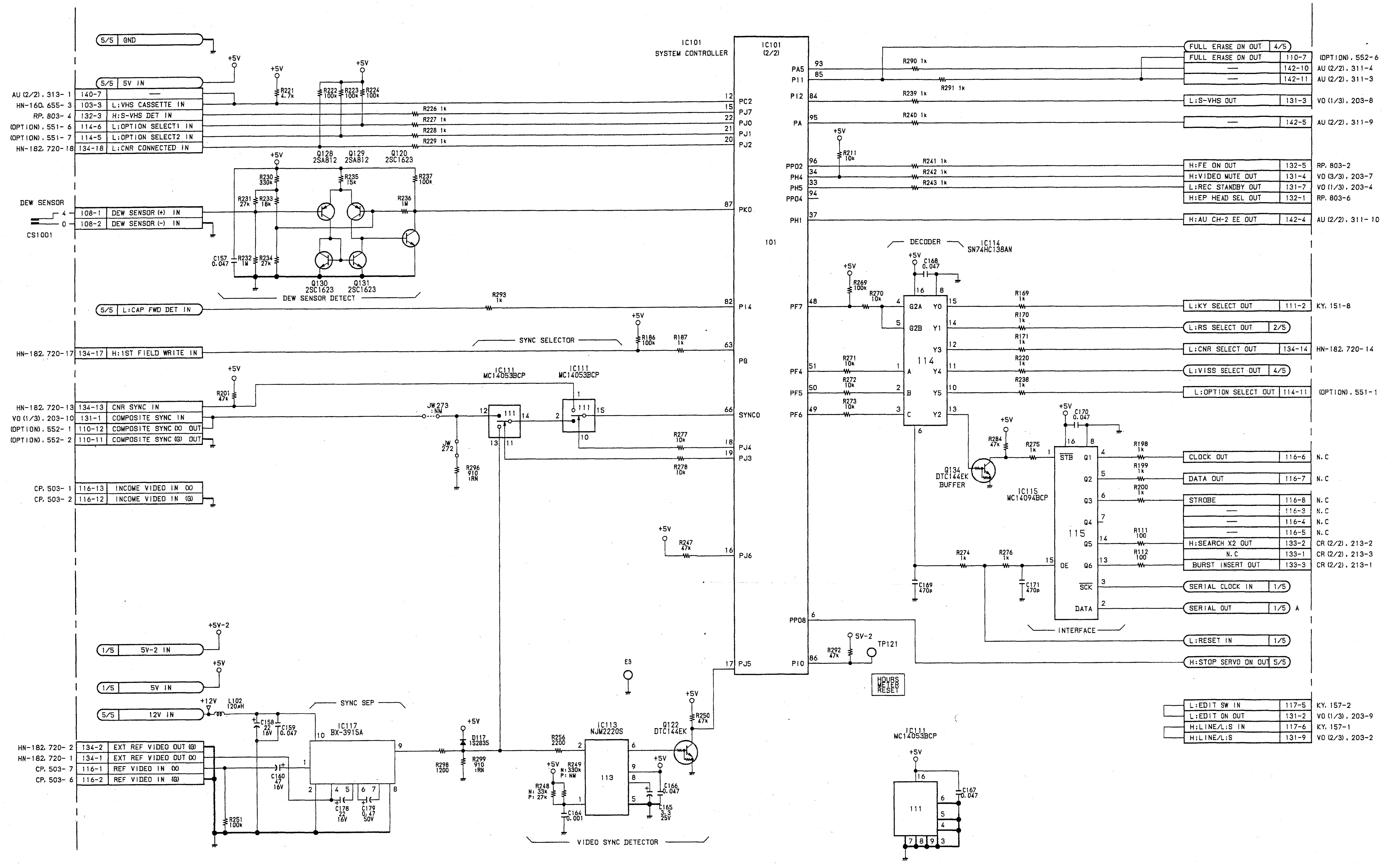
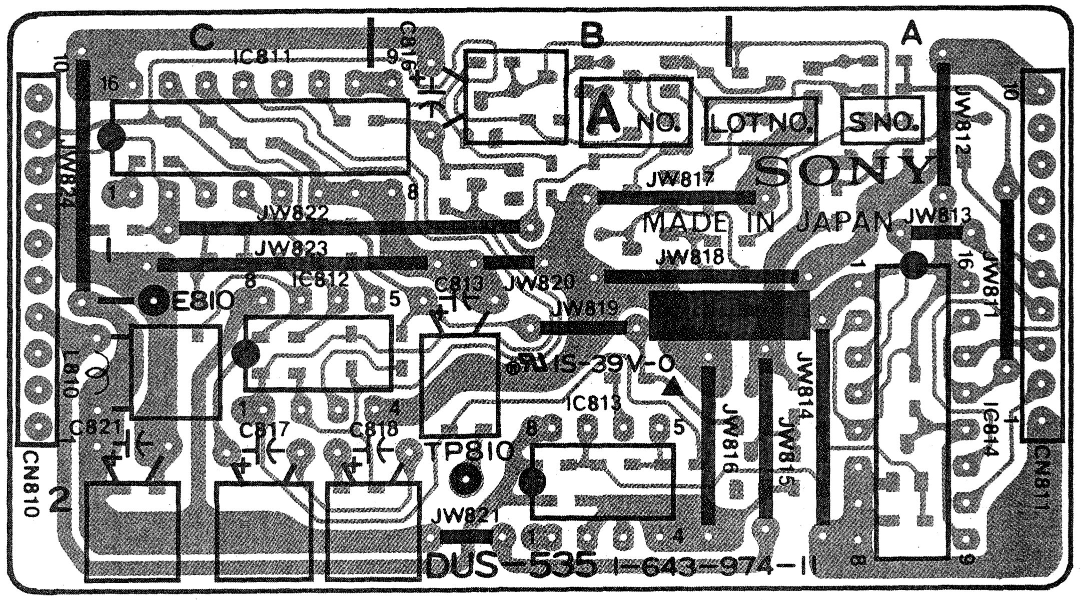
SS-49E (3/5); SYSTEM CONTROL


IC101
SYSTEM CONTROLLER
IC101 (2/2)
5/5 GND
5/5 5V IN
+5V
R221 4.7k
R222 100k
R223 100k
R224 100k
AU (2/2), 313- 1 140-7
HN-160, 655- 3 103-3 L:VHS CASSETTE IN
RP, 803- 4 132-3 H:S-VHS DET IN
(OPTION), 551- 6 114-6 L:OPTION SELECT1 IN
(OPTION), 551- 7 114-5 L:OPTION SELECT2 IN
HN-182, 720-18 134-18 L:CNR CONNECTED IN
R226 1k
R227 1k
R228 1k
R229 1k
PC2
PJ7
PJ0
PJ1
PJ2
Q128 2SA812
Q129 2SA812
Q120 2SC1623
R230 330k
R235 15k
R237 100k
R231 27k
R233 18k
R236 1M
DEW SENSOR
108-1 DEW SENSOR (+) IN
108-2 DEW SENSOR (-) IN
CS1001
PK0
C157 0.047
R232 1M
R234 27k
Q130 2SC1623
Q131 2SC1623
DEW SENSOR DETECT
101
5/5 L:CAP FWD DET IN
R293 1k
PI4
SYNC SELECTOR
R186 100k
R187 1k
HN-182, 720-17 134-17 H:1ST FIELD WRITE IN
P8
IC111 MC14053BCP
R201 47k
HN-182, 720-13 134-13 CNR SYNC IN
VO (1/3), 203-10 131-1 COMPOSITE SYNC IN
(OPTION), 552- 1 110-12 COMPOSITE SYNC (X) OUT
(OPTION), 552- 2 110-11 COMPOSITE SYNC (G) OUT
JW273 :NM
JW 272
R296 910 :RN
SYNCO
R277 10k
R278 10k
PJ4
PJ3
CP, 503- 1 116-13 INCOME VIDEO IN (X)
CP, 503- 2 116-12 INCOME VIDEO IN (G)
R247 47k
PJ6
+5V-2
1/5 5V-2 IN
1/5 5V IN
+12V
L102 120μH
5/5 12V IN
SYNC SEP
IC117 BX-3915A
C158 22 16V
C159 0.047
HN-182, 720- 2 134-2 EXT REF VIDEO OUT (G)
HN-182, 720- 1 134-1 EXT REF VIDEO OUT (X)
CP, 503- 7 116-1 REF VIDEO IN (X)
CP, 503- 6 116-2 REF VIDEO IN (G)
C160 47 16V
C178 22 16V
C179 0.47 50V
R251 100k
D117 1S2835
R298 1200
R299 910 :RN
R256 2200
IC113 NJM2220S
113
R248 N: 33k P: 27k
R249 N: 330k P: NM
C164 0.001
C166 0.047
C165 3.3 25V
VIDEO SYNC DETECTOR
E3
Q122 DTC144EK
R250 47k
PJ5
PI0
TP121
5V-2
R292 47k
HOURS METER RESET
PP08
PA5
PI1
PI2
PA
PP02
PH4
PH5
PP04
PH1
R290 1k
R291 1k
R239 1k
R240 1k
R211 10k
R241 1k
R242 1k
R243 1k
FULL ERASE ON OUT 4/5
FULL ERASE ON OUT 110-7 (OPTION), 552-6
— 142-10 AU (2/2), 311-4
— 142-11 AU (2/2), 311-3
L:S-VHS OUT 131-3 VO (1/3), 203-8
— 142-5 AU (2/2), 311-9
H:FE ON OUT 132-5 RP, 803-2
H:VIDEO MUTE OUT 131-4 VO (3/3), 203-7
L:REC STANDBY OUT 131-7 VO (1/3), 203-4
H:EP HEAD SEL OUT 132-1 RP, 803-6
H:AU CH-2 EE OUT 142-4 AU (2/2), 311-10
DECODER
IC114 SN74HC138AN
C168 0.047
R269 100k
R270 10k
PF7
PF4
PF5
PF6
R271 10k
R272 10k
R273 10k
114
G2A Y0
G2B Y1
Y3
A Y4
B Y5
C Y2
R169 1k
R170 1k
R171 1k
R220 1k
R238 1k
L:KY SELECT OUT 111-2 KY, 151-8
L:RS SELECT OUT 2/5
L:CNR SELECT OUT 134-14 HN-182, 720-14
L:VISS SELECT OUT 4/5
L:OPTION SELECT OUT 114-11 (OPTION), 551-1
C170 0.047
R284 47k
R275 1k
Q134 DTC144EK BUFFER
IC115 MC14094BCP
115
STB Q1
Q2
Q3
Q4
Q5
OE Q6
SCK
DATA
R198 1k
R199 1k
R200 1k
R111 100
R112 100
CLOCK OUT 116-6 N.C
DATA OUT 116-7 N.C
STROBE 116-8 N.C
— 116-3 N.C
— 116-4 N.C
— 116-5 N.C
H:SEARCH X2 OUT 133-2 CR (2/2), 213-2
N.C 133-1 CR (2/2), 213-3
BURST INSERT OUT 133-3 CR (2/2), 213-1
SERIAL CLOCK IN 1/5
SERIAL OUT 1/5 A
R274 1k
R276 1k
C169 470p
C171 470p
INTERFACE
L:RESET IN 1/5
H:STOP SERVO ON OUT 5/5
L:EDIT SW IN 117-5 KY, 157-2
L:EDIT ON OUT 131-2 VO (1/3), 203-9
H:LINE/L:S IN 117-6 KY, 157-1
H:LINE/L:S 131-9 VO (2/3), 203-2
IC111 MC14053BCP
C167 0.047
111

SS-49E (3/5)

1-641-575-14, 15 (1)
SVP-9020

SS-49E (4/5); EDGE SEPARATOR
DUS-535; CTL HEAD AMP

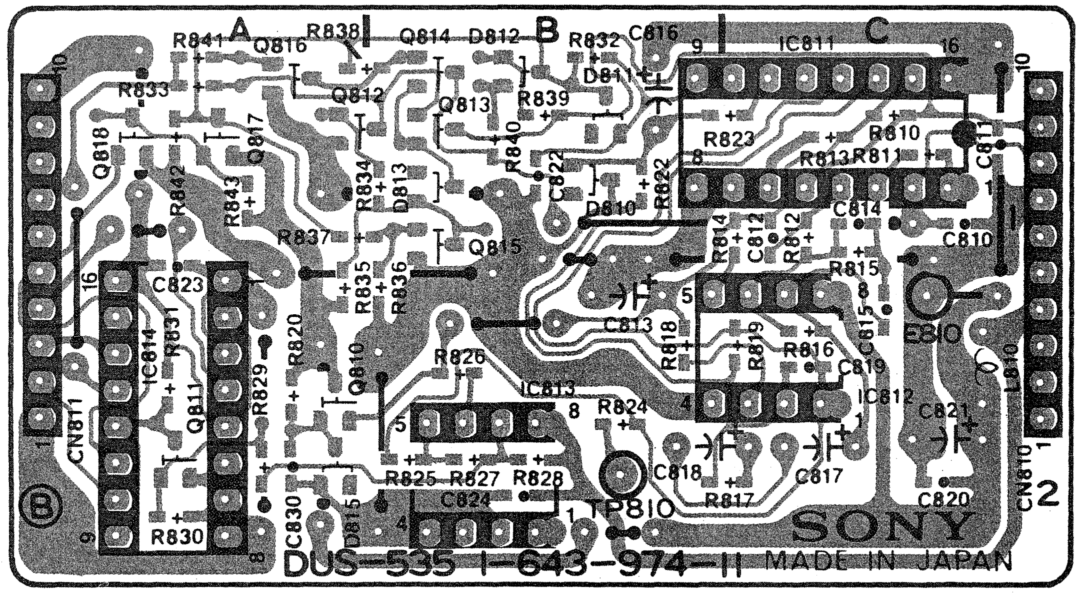

C
IC811
B
A
A NO.
LOT NO.
S NO.
SONY
MADE IN JAPAN
JW817
JW822
JW823
JW813
JW818
JW812
JW811
E810
IC812
C813
JW820
JW819
IS-39V-0
IC813
JW814
JW815
JW816
IC814
C821
C817
C818
TP810
JW821
L810
CN810
CN811
DUS-535 1-643-974-11

DUS-535 — A SIDE —
1-643-974-11 (1)
SVP-9020

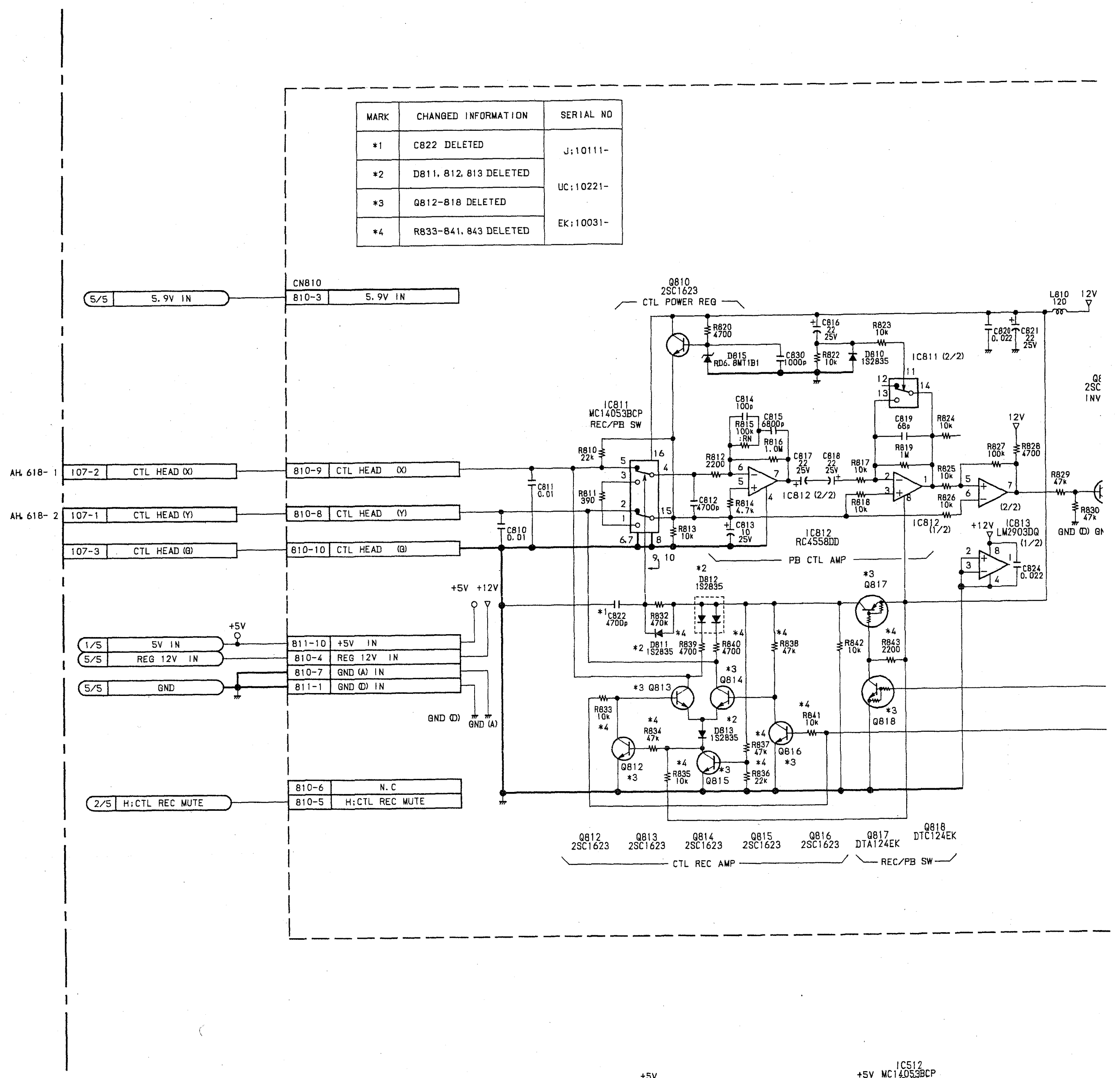
DUS-535 (1-643-974-11)

CN810	C-1
CN811	A-1
D810	B-1 *
D811	B-1 *
D812	B-1 *
D813	B-1 *
D815	A-2 *
E810	C-1
IC811	C-1
IC812	C-2
IC813	B-2
IC814	A-2
Q810	A-2 *
Q811	A-2 *
Q812	A-1 *
Q813	B-1 *
Q814	B-1 *
Q815	B-1 *
Q816	A-1 *
Q817	A-1 *
Q818	A-1 *
TP810	B-2

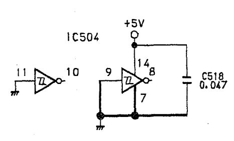
* mark; B SIDE mount

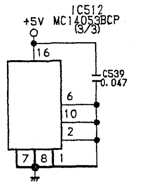

R841
A
R838
Q814
D812
B
R832
C816
IC811
C
Q816
R833
Q812
Q813
R839
D811
Q818
Q817
R842
R843
R834
D813
R840
C822
R823
R813
R811
R810
C811
D810
R822
C814
R837
R835
R836
Q815
R814
C812
R812
R815
C810
C823
IC814
R831
R820
R829
Q811
Q810
R826
C813
R818
R819
R816
C815
C819
E810
L810
IC813
R824
IC812
C821
CN811
R825
R827
R828
C824
C818
C817
R817
C820
TP810
C830
D815
R830
CN810
SONY
DUS-535 1-643-974-11 MADE IN JAPAN

DUS-535 — B SIDE —
1-643-974-11 (1)
SVP-9020

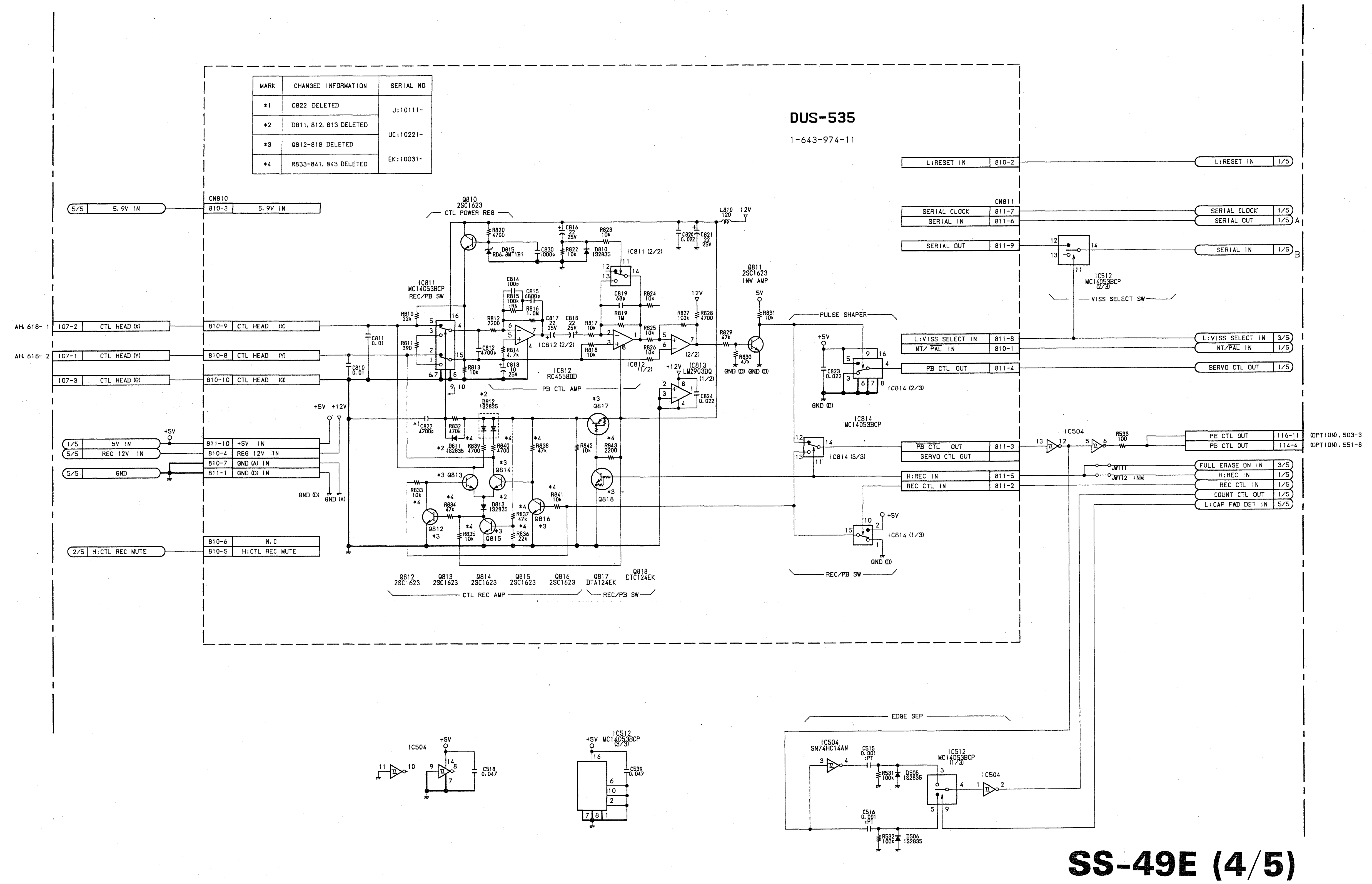

5/5
5.9V IN
CN810
810-3
Q810
2SC1623
CTL POWER REG
R820 4700
D815 RD6.8MT1B1
C830 1000p
C816 22 25V
R822 10k
R823 10k
D810 1S2835
IC811 (2/2)
C820 0.022
C821 22 25V
L810 120
12V
IC811
MC14053BCP
REC/PB SW
C814 100p
R815 100k
C815 6800p
R816 1.0M
C819 68p
R824 10k
R827 100k
R828 4700
R829 47k
R830 47k
AH. 618-1
107-2
CTL HEAD (X)
810-9
AH. 618-2
107-1
CTL HEAD (Y)
810-8
107-3
CTL HEAD (G)
810-10
R810 22k
R811 390
C811 0.01
C810 0.01
R812 2200
C812 4700p
R814 4.7k
R813 10k
C813 10 25V
C817 22 25V
C818 22 25V
R817 10k
R818 10k
R819 1M
R825 10k
R826 10k
IC812 (2/2)
IC812 (1/2)
IC812 RC4558DD
PB CTL AMP
IC813 LM2903DQ (1/2)
(2/2)
C824 0.022
GND (D)
+5V
+12V
*2 D812 1S2835
*3 Q817
*1 C822 4700p
R832 470k
*2 D811 1S2835
R839 4700
R840 4700
R838 47k
R842 10k
R843 2200
*3 Q814
*3 Q813
R833 10k
R834 47k
Q812
R835 10k
D813 1S2835
Q815
R837 47k
R836 22k
R841 10k
Q816
Q818
1/5
5V IN
5/5
REG 12V IN
GND
811-10 +5V IN
810-4 REG 12V IN
810-7 GND (A) IN
811-1 GND (D) IN
GND (D)
GND (A)
810-6 N.C
2/5
H:CTL REC MUTE
810-5 H:CTL REC MUTE
Q812 2SC1623
Q813 2SC1623
Q814 2SC1623
Q815 2SC1623
Q816 2SC1623
Q817 DTA124EK
Q818 DTC124EK
CTL REC AMP
REC/PB SW

MARK	CHANGED INFORMATION	SERIAL NO
*1	C822 DELETED	J:10111- UC:10221- EK:10031-
*2	D811, 812, 813 DELETED	
*3	Q812-818 DELETED	
*4	R833-841, 843 DELETED	


IC504
+5V
C518 0.047


IC512
+5V MC14053BCP (3/3)
C539 0.047

1-643-974-11)
C-
A-1
B-
B-
B-
B-1 *
A-2 *
C-
C-1
C-2
B-
A-
A-2 *
A-
A-
B-
B-1 *
B-1 *
A-
A-
A-1 *
B-
SIDE mount


DUS-535
1-643-974-11
CN810
5/5 5.9V IN
810-3 5.9V IN
AH 618-1 107-2 CTL HEAD (X)
AH 618-2 107-1 CTL HEAD (Y)
107-3 CTL HEAD (G)
810-9 CTL HEAD (X)
810-8 CTL HEAD (Y)
810-10 CTL HEAD (G)
C811 0.01
C810 0.01
1/5 5V IN
5/5 REG 12V IN
5/5 GND
811-10 +5V IN
810-4 REG 12V IN
810-7 GND (A) IN
811-1 GND (D) IN
GND (D)
GND (A)
+5V +12V
810-6 N.C
2/5 H:CTL REC MUTE
810-5 H:CTL REC MUTE
Q810 2SC1623
CTL POWER REG
R820 4700
D815 RD6.8MT1B1
C830 1000p
C816 22 25V
R822 10k
D810 1S2835
R823 10k
C820 0.022
C821 22 25V
L810 120
12V
IC811 MC14053BCP REC/PB SW
R810 22k
R811 390
C814 100p
C815 6800p
R815 100k :RN
R816 1.0M
R812 2200
C812 4700p
R814 4.7k
R813 10k
C813 10 25V
C817 22 25V
C818 22 25V
R817 10k
R818 10k
C819 68p
R824 10k
R819 1M
R825 10k
R826 10k
R827 100k
R828 4700
IC811 (2/2)
IC812 (2/2)
IC812 RC4558DD
IC812 (1/2)
IC813 LM2903DQ (1/2)
(2/2)
C824 0.022
PB CTL AMP
Q811 2SC1623 INV AMP
5V
R831 10k
R829 47k
R830 47k
GND (D) GND (D)
*1 C822 4700p
R832 470k
*2 D811 1S2835
R839 4700
*2 D812 1S2835
R840 4700
R838 47k
R842 10k
R843 2200
*3 Q817
*3 Q813
*3 Q814
R833 10k
R834 47k
*2 D813 1S2835
R837 47k
R841 10k
R835 10k
R836 22k
Q812
Q815
Q816
*3 Q818
Q812 2SC1623
Q813 2SC1623
Q814 2SC1623
Q815 2SC1623
Q816 2SC1623
Q817 DTA124EK
Q818 DTC124EK
CTL REC AMP
REC/PB SW
PULSE SHAPER
+5V
C823 0.022
IC814 (2/3)
IC814 MC14053BCP
GND (D)
IC814 (3/3)
IC814 (1/3)
REC/PB SW
L:RESET IN 810-2
CN811
SERIAL CLOCK 811-7
SERIAL IN 811-6
SERIAL OUT 811-9
IC512 MC14053BCP (2/3)
VISS SELECT SW
L:VISS SELECT IN 811-8
NT/PAL IN 810-1
PB CTL OUT 811-4
PB CTL OUT 811-3
SERVO CTL OUT
H:REC IN 811-5
REC CTL IN 811-2
IC504
R533 100
JW111
JW112 :NM
L:RESET IN 1/5
SERIAL CLOCK 1/5
SERIAL OUT 1/5 A
SERIAL IN 1/5 B
L:VISS SELECT IN 3/5
NT/PAL IN 1/5
SERVO CTL OUT 1/5
PB CTL OUT 116-11 (OPTION), 503-3
PB CTL OUT 114-4 (OPTION), 551-8
FULL ERASE ON IN 3/5
H:REC IN 1/5
REC CTL IN 1/5
COUNT CTL OUT 1/5
L:CAP FWD DET IN 5/5
EDGE SEP
IC504 SN74HC14AN
C515 0.001 :PT
R531 100k
D505 1S2835
C516 0.001 :PT
R532 100k
D506 1S2835
IC512 MC14053BCP (1/3)
IC504
C518 0.047
IC512 MC14053BCP (3/3)
C539 0.047
+5V

MARK	CHANGED INFORMATION	SERIAL NO
*1	C822 DELETED	J:10111- UC:10221- EK:10031-
*2	D811, 812, 813 DELETED	
*3	Q812-818 DELETED	
*4	R833-841, 843 DELETED	

1
2
3
4
5

SS-49E (4/5)

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DUS-535

1-643-974-11 (1)
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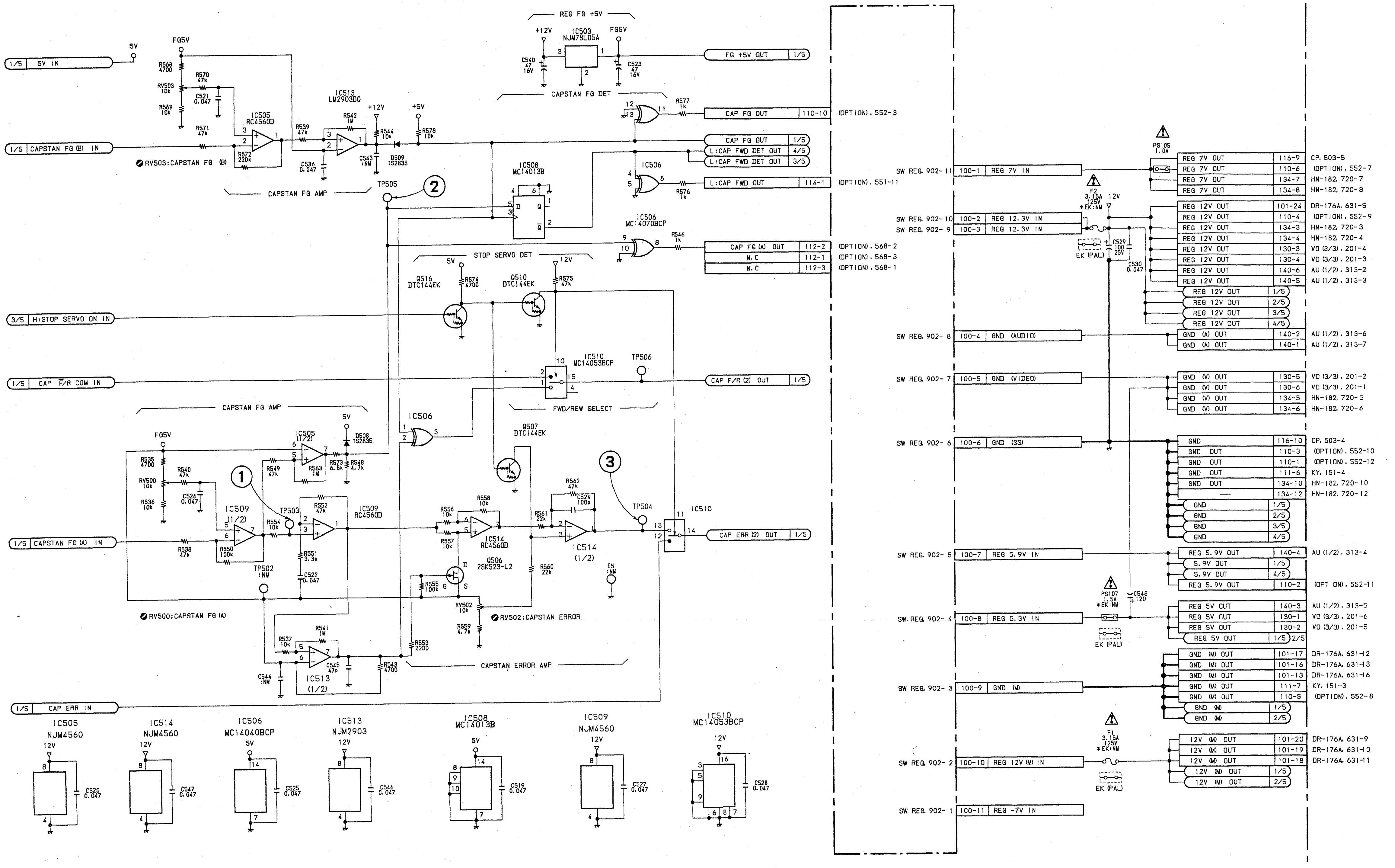
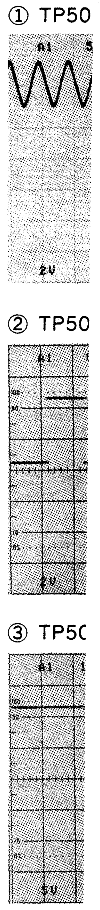
E F G H I J K L

SS-49E (5/5) ; CAPSTAN FG AMP POWER BLOCK


1/5 5V IN
5V
FG5V
R568 4700
R570 47k
RV503 10k
C521 0.047
R569 10k
IC505 RC4560D
IC513 LM2903DQ
1/5 CAPSTAN FG (B) IN
RV503:CAPSTAN FG (B)
R571 47k
R572 220k
R539 47k
R542 1M
+12V
+5V
R544 10k
R578 10k
C536 0.047
C543 :NM
D509 1S2835
CAPSTAN FG AMP
TP505
②
REG FG +5V
+12V
IC503 NJM78L05A
C540 47 16V
C523 47 16V
FG +5V OUT 1/5
CAPSTAN FG DET
R577 1k
CAP FG OUT 110-10 (OPTION), 552-3
CAP FG OUT 1/5
L:CAP FWD DET OUT 4/5
L:CAP FWD DET OUT 3/5
IC508 MC14013B
IC506
R576 1k
L:CAP FWD OUT 114-1 (OPTION), 551-11
IC506 MC14070BCP
R546 1k
CAP FG (A) OUT 112-2 (OPTION), 568-2
N.C 112-1 (OPTION), 568-3
N.C 112-3 (OPTION), 568-1
STOP SERVO DET
Q516 DTC144EK
R574 4700
Q510 DTC144EK
R575 47k
3/5 H:STOP SERVO ON IN
IC510 MC14053BCP
TP506
1/5 CAP F/R COM IN
CAP F/R (2) OUT 1/5
FWD/REW SELECT
CAPSTAN FG AMP
IC505 (1/2)
D508 1S2835
R573 6.8k
R548 4.7k
R563 1M
Q507 DTC144EK
R535 4700
R540 47k
RV500 10k
C526 0.047
R536 10k
①
IC509 (1/2)
TP503
R554 10k
R549 47k
R552 47k
IC509 RC4560D
R556 10k
R558 10k
IC514 RC4560D
R557 10k
③
R562 47k
C524 100p
R561 22k
TP504
IC510
IC514 (1/2)
CAP ERR (2) OUT 1/5
1/5 CAPSTAN FG (A) IN
R538 47k
R550 100k
R551 3.3k
C522 0.047
TP502 :NM
Q506 2SK523-L2
R555 100k
R560 22k
E5 :NM
RV502 10k
R559 4.7k
RV500:CAPSTAN FG (A)
RV502:CAPSTAN ERROR
R541 1M
R537 10k
C545 47p
R543 4700
R553 2200
C544 :NM
IC513 (1/2)
CAPSTAN ERROR AMP
1/5 CAP ERR IN
IC505 NJM4560
IC514 NJM4560
IC506 MC14040BCP
IC513 NJM2903
IC508 MC14013B
IC509 NJM4560
IC510 MC14053BCP
C520 0.047
C547 0.047
C525 0.047
C546 0.047
C519 0.047
C527 0.047
C528 0.047
SW REG 902-11 100-1 REG 7V IN
SW REG 902-10 100-2 REG 12.3V IN
SW REG 902- 9 100-3 REG 12.3V IN
SW REG 902- 8 100-4 GND (AUDIO)
SW REG 902- 7 100-5 GND (VIDEO)
SW REG 902- 6 100-6 GND (SS)
SW REG 902- 5 100-7 REG 5.9V IN
SW REG 902- 4 100-8 REG 5.3V IN
SW REG 902- 3 100-9 GND (M)
SW REG 902- 2 100-10 REG 12V (M) IN
SW REG 902- 1 100-11 REG -7V IN
PS105 1.0A
F2 3.15A 125V *EK:NM
C529 100 25V
C530 0.047
EK (PAL)
PS107 1.5A *EK:NM
C548 120
F1 3.15A 125V *EK:NM
REG 7V OUT 116-9 CP, 503-5
REG 7V OUT 110-6 (OPTION), 552-7
REG 7V OUT 134-7 HN-182, 720-7
REG 7V OUT 134-8 HN-182, 720-8
REG 12V OUT 101-24 DR-176A, 631-5
REG 12V OUT 110-4 (OPTION), 552-9
REG 12V OUT 134-3 HN-182, 720-3
REG 12V OUT 134-4 HN-182, 720-4
REG 12V OUT 130-3 VD (3/3), 201-4
REG 12V OUT 130-4 VD (3/3), 201-3
REG 12V OUT 140-6 AU (1/2), 313-2
REG 12V OUT 140-5 AU (1/2), 313-3
REG 12V OUT 1/5
REG 12V OUT 2/5
REG 12V OUT 3/5
REG 12V OUT 4/5
GND (A) OUT 140-2 AU (1/2), 313-6
GND (A) OUT 140-1 AU (1/2), 313-7
GND (V) OUT 130-5 VD (3/3), 201-2
GND (V) OUT 130-6 VD (3/3), 201-1
GND (V) OUT 134-5 HN-182, 720-5
GND (V) OUT 134-6 HN-182, 720-6
GND 116-10 CP, 503-4
GND OUT 110-3 (OPTION), 552-10
GND OUT 110-1 (OPTION), 552-12
GND OUT 111-6 KY, 151-4
GND OUT 134-10 HN-182, 720-10
134-12 HN-182, 720-12
GND 1/5
GND 2/5
GND 3/5
GND 4/5
REG 5.9V OUT 140-4 AU (1/2), 313-4
5.9V OUT 1/5
5.9V OUT 4/5
REG 5.9V OUT 110-2 (OPTION), 552-11
REG 5V OUT 140-3 AU (1/2), 313-5
REG 5V OUT 130-1 VD (3/3), 201-6
REG 5V OUT 130-2 VD (3/3), 201-5
REG 5V OUT 1/5 2/5
GND (M) OUT 101-17 DR-176A, 631-12
GND (M) OUT 101-16 DR-176A, 631-13
GND (M) OUT 101-13 DR-176A, 631-16
GND (M) OUT 111-7 KY, 151-3
GND (M) OUT 110-5 (OPTION), 552-8
GND (M) 1/5
GND (M) 2/5
12V (M) OUT 101-20 DR-176A, 631-9
12V (M) OUT 101-19 DR-176A, 631-10
12V (M) OUT 101-18 DR-176A, 631-11
12V (M) OUT 1/5
12V (M) OUT 2/5

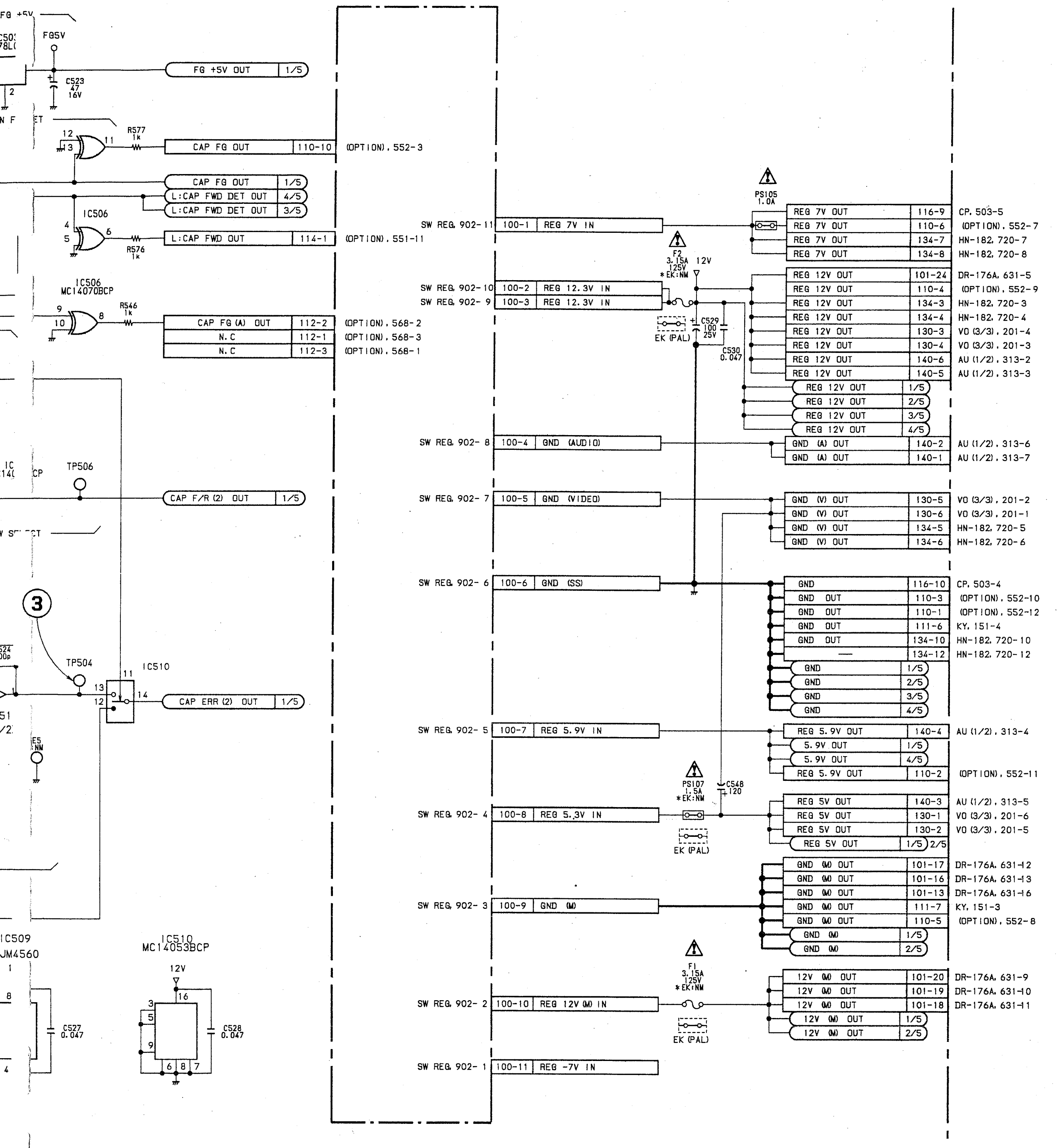


Measur
PB moc

SS-49E (5/5)

1-641-575-13, 14, 15 (1)
SVP-9020

NOTE:
The ⚠-marked components are critical to safety.
Replace only with same components as specified.


FG +5V OUT 1/5
CAP FG OUT 110-10 (OPTION). 552-3
CAP FG OUT 1/5
L:CAP FWD DET OUT 4/5
L:CAP FWD DET OUT 3/5
L:CAP FWD OUT 114-1 (OPTION). 551-11
IC506
IC506 MC14070BCP
CAP FG (A) OUT 112-2 (OPTION). 568-2
N.C 112-1 (OPTION). 568-3
N.C 112-3 (OPTION). 568-1
TP506
CAP F/R (2) OUT 1/5
TP504
IC510
CAP ERR (2) OUT 1/5
IC509 NJM4560
IC510 MC14053BCP
C527 0.047
C528 0.047
SW REG 902-11 100-1 REG 7V IN
PS105 1.0A
REG 7V OUT 116-9 CP. 503-5
REG 7V OUT 110-6 (OPTION). 552-7
REG 7V OUT 134-7 HN-182. 720-7
REG 7V OUT 134-8 HN-182. 720-8
SW REG 902-10 100-2 REG 12.3V IN
SW REG 902-9 100-3 REG 12.3V IN
F2 3.15A 125V *EK:NM
EK (PAL)
C529 100 25V
C530 0.047
REG 12V OUT 101-24 DR-176A. 631-5
REG 12V OUT 110-4 (OPTION). 552-9
REG 12V OUT 134-3 HN-182. 720-3
REG 12V OUT 134-4 HN-182. 720-4
REG 12V OUT 130-3 VO (3/3). 201-4
REG 12V OUT 130-4 VO (3/3). 201-3
REG 12V OUT 140-6 AU (1/2). 313-2
REG 12V OUT 140-5 AU (1/2). 313-3
REG 12V OUT 1/5
REG 12V OUT 2/5
REG 12V OUT 3/5
REG 12V OUT 4/5
SW REG 902-8 100-4 GND (AUDIO)
GND (A) OUT 140-2 AU (1/2). 313-6
GND (A) OUT 140-1 AU (1/2). 313-7
SW REG 902-7 100-5 GND (VIDEO)
GND (V) OUT 130-5 VO (3/3). 201-2
GND (V) OUT 130-6 VO (3/3). 201-1
GND (V) OUT 134-5 HN-182. 720-5
GND (V) OUT 134-6 HN-182. 720-6
SW REG 902-6 100-6 GND (SS)
GND 116-10 CP. 503-4
GND OUT 110-3 (OPTION). 552-10
GND OUT 110-1 (OPTION). 552-12
GND OUT 111-6 KY. 151-4
GND OUT 134-10 HN-182. 720-10
134-12 HN-182. 720-12
GND 1/5
GND 2/5
GND 3/5
GND 4/5
SW REG 902-5 100-7 REG 5.9V IN
REG 5.9V OUT 140-4 AU (1/2). 313-4
5.9V OUT 1/5
5.9V OUT 4/5
REG 5.9V OUT 110-2 (OPTION). 552-11
PS107 1.5A *EK:NM
C548 120
SW REG 902-4 100-8 REG 5.3V IN
REG 5V OUT 140-3 AU (1/2). 313-5
REG 5V OUT 130-1 VO (3/3). 201-6
REG 5V OUT 130-2 VO (3/3). 201-5
REG 5V OUT 1/5 2/5
SW REG 902-3 100-9 GND (M)
GND (M) OUT 101-17 DR-176A. 631-12
GND (M) OUT 101-16 DR-176A. 631-13
GND (M) OUT 101-13 DR-176A. 631-16
GND (M) OUT 111-7 KY. 151-3
GND (M) OUT 110-5 (OPTION). 552-8
GND (M) 1/5
GND (M) 2/5
SW REG 902-2 100-10 REG 12V (M) IN
F1 3.15A 125V *EK:NM
12V (M) OUT 101-20 DR-176A. 631-9
12V (M) OUT 101-19 DR-176A. 631-10
12V (M) OUT 101-18 DR-176A. 631-11
12V (M) OUT 1/5
12V (M) OUT 2/5
SW REG 902-1 100-11 REG -7V IN

SS-49E (5/5)

1-641-575-13, 14, 15 (1)
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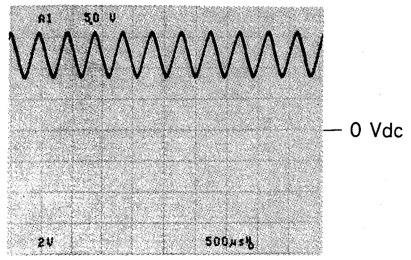
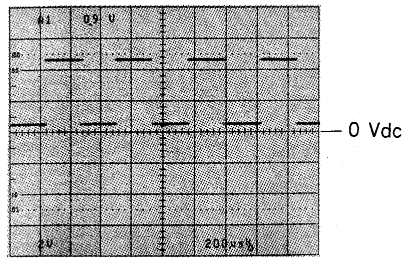
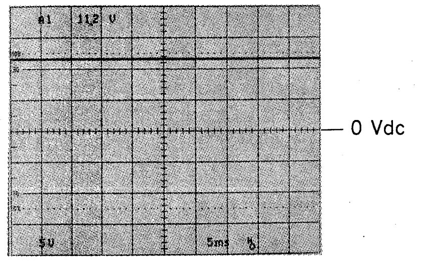
① TP503 (K-9) PB mode



② TP505 (K-9) PB mode



③ TP504 (K-9) PB mode



Measurement Condition
PB mode: KRV-45HPS

1
2
3
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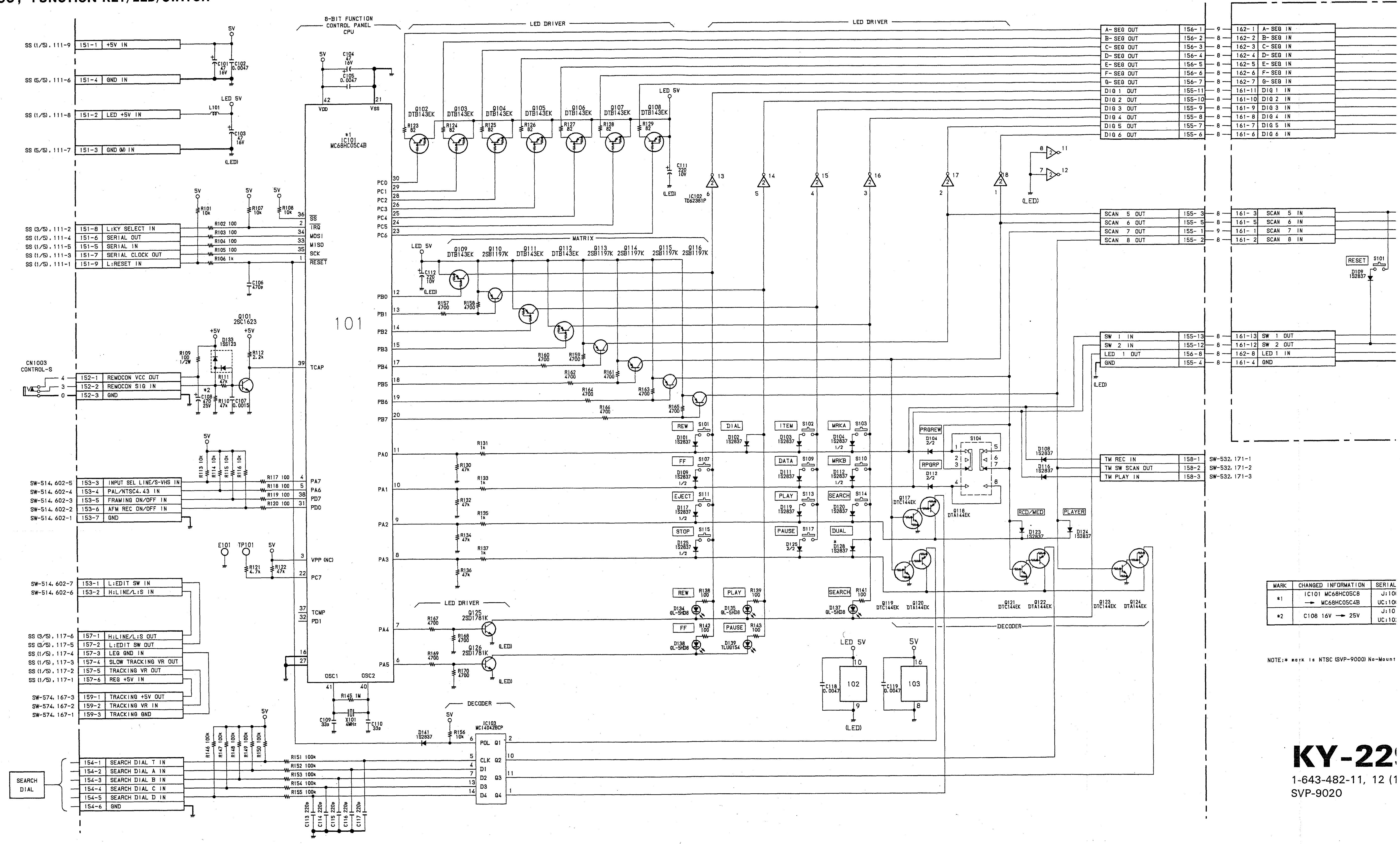
5

DP-166 ; COUNTER DISPLAY
KY-229C ; FUNCTION KEY/LED/SWITCH


1
2
3
4
5
8-BIT FUNCTION CONTROL PANEL CPU
LED DRIVER
LED DRIVER
MATRIX
DECODER
LED DRIVER
DECODER
IC101 MC68HC05C4B
101
IC102 TD62381P
IC103 MC14042BCP
102
103
SS (1/5). 111-9
SS (5/5). 111-6
SS (1/5). 111-8
SS (5/5). 111-7
151-1 +5V IN
151-4 GND IN
151-2 LED +5V IN
151-3 GND (M) IN
151-8 L:KY SELECT IN
151-6 SERIAL OUT
151-5 SERIAL IN
151-7 SERIAL CLOCK OUT
151-9 L:RESET IN
CN1003 CONTROL-S
152-1 REMOCON VCC OUT
152-2 REMOCON SIG IN
152-3 GND
153-3 INPUT SEL LINE/S-VHS IN
153-4 PAL/NTSC4.43 IN
153-5 FRAMING ON/OFF IN
153-6 AFM REC ON/OFF IN
153-7 GND
153-1 L:EDIT SW IN
153-2 H:LINE/L:S IN
157-1 H:LINE/L:S OUT
157-2 L:EDIT SW OUT
157-3 LEG GND IN
157-4 SLOW TRACKING VR OUT
157-5 TRACKING VR OUT
157-6 REG +5V IN
159-1 TRACKING +5V OUT
159-2 TRACKING VR IN
159-3 TRACKING GND
SEARCH DIAL
154-1 SEARCH DIAL T IN
154-2 SEARCH DIAL A IN
154-3 SEARCH DIAL B IN
154-4 SEARCH DIAL C IN
154-5 SEARCH DIAL D IN
154-6 GND
A-SEG OUT
B-SEG OUT
C-SEG OUT
D-SEG OUT
E-SEG OUT
F-SEG OUT
G-SEG OUT
DIG 1 OUT
DIG 2 OUT
DIG 3 OUT
DIG 4 OUT
DIG 5 OUT
DIG 6 OUT
A-SEG IN
B-SEG IN
C-SEG IN
D-SEG IN
E-SEG IN
F-SEG IN
G-SEG IN
DIG 1 IN
DIG 2 IN
DIG 3 IN
DIG 4 IN
DIG 5 IN
DIG 6 IN
SCAN 5 OUT
SCAN 6 OUT
SCAN 7 OUT
SCAN 8 OUT
SCAN 5 IN
SCAN 6 IN
SCAN 7 IN
SCAN 8 IN
SW 1 IN
SW 2 IN
LED 1 OUT
GND
SW 1 OUT
SW 2 OUT
LED 1 IN
GND
RESET S101
TM REC IN
TM SW SCAN OUT
TM PLAY IN
SW-532. 171-1
SW-532. 171-2
SW-532. 171-3
REW
DIAL
ITEM
MRKA
FF
DATA
MRKB
PRGREW
RPGRP
EJECT
PLAY
SEARCH
STOP
PAUSE
DUAL
RCD/MED
PLAYER
REW
PLAY
SEARCH
FF
PAUSE
LED 5V
5V
(LED)

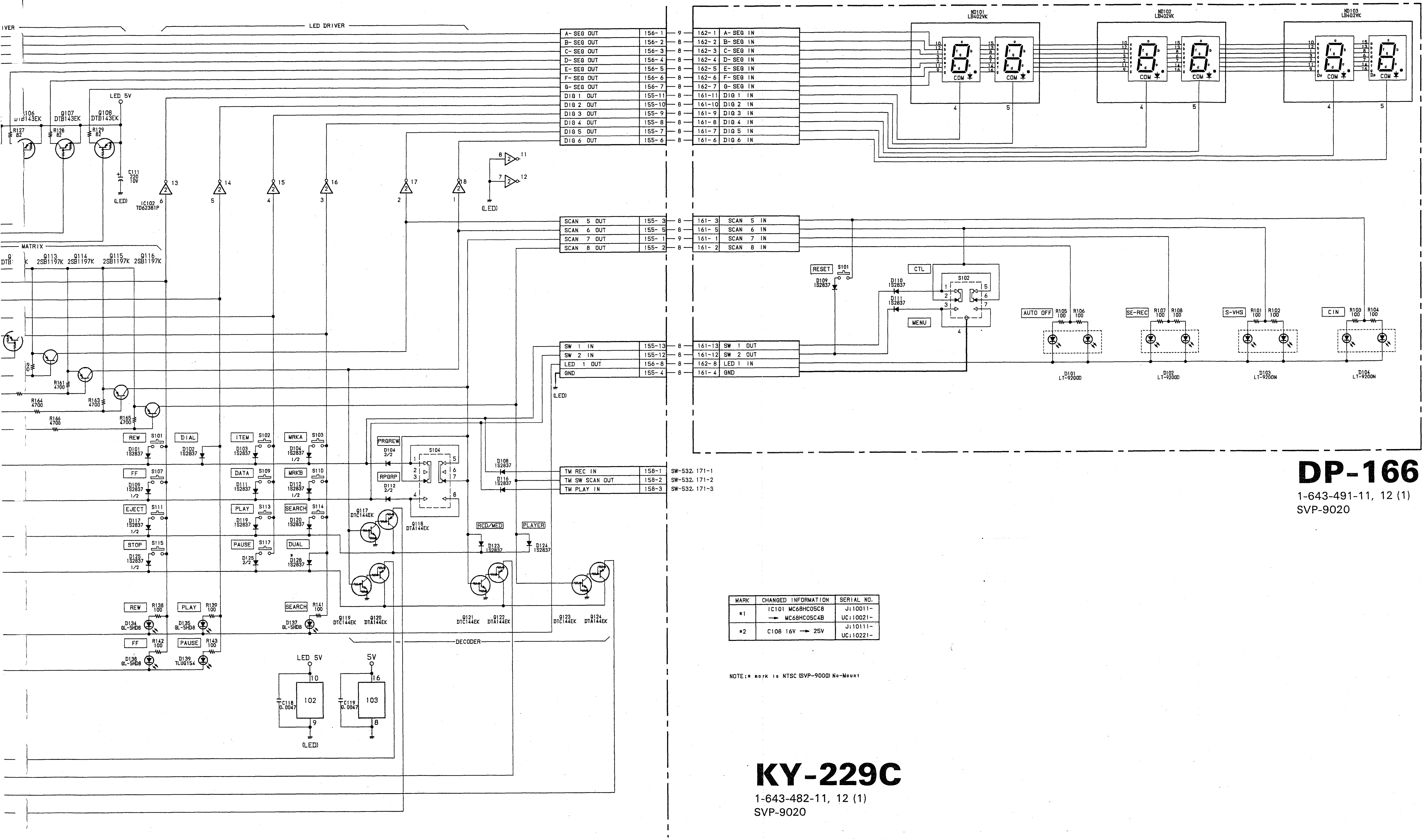
MARK	CHANGED INFORMATION	SERIAL
*1	IC101 MC68HC05C8 → MC68HC05C4B	J;10 UC;10
*2	C108 16V → 25V	J;10 UC;10

NOTE;* mark is NTSC (SVP-9000) No-Mount

KY-22

1-643-482-11, 12 (1

SVP-9020


LED DRIVER
MATRIX
DECODER
LED 5V
5V
(LED)
IC102 TD62381P
Q106 DTB143EK
Q107 DTB143EK
Q108 DTB143EK
R127 82
R128 82
R129 82
C111 220 10V
Q113 2SB1197K
Q114 2SB1197K
Q115 2SB1197K
Q116 2SB1197K
R161 4700
R163 4700
R164 4700
R165 4700
R166 4700
A-SEG OUT
B-SEG OUT
C-SEG OUT
D-SEG OUT
E-SEG OUT
F-SEG OUT
G-SEG OUT
DIG 1 OUT
DIG 2 OUT
DIG 3 OUT
DIG 4 OUT
DIG 5 OUT
DIG 6 OUT
A-SEG IN
B-SEG IN
C-SEG IN
D-SEG IN
E-SEG IN
F-SEG IN
G-SEG IN
DIG 1 IN
DIG 2 IN
DIG 3 IN
DIG 4 IN
DIG 5 IN
DIG 6 IN
SCAN 5 OUT
SCAN 6 OUT
SCAN 7 OUT
SCAN 8 OUT
SCAN 5 IN
SCAN 6 IN
SCAN 7 IN
SCAN 8 IN
SW 1 IN
SW 2 IN
LED 1 OUT
GND
SW 1 OUT
SW 2 OUT
LED 1 IN
TM REC IN
TM SW SCAN OUT
TM PLAY IN
SW-532, 171-1
SW-532, 171-2
SW-532, 171-3
ND101 LB402VK
ND102 LB402VK
ND103 LB402VK
COM
RESET
S101
D109 1S2837
CTL
S102
D110 1S2837
D111 1S2837
MENU
AUTO OFF
R105 100
R106 100
SE-REC
R107 100
R108 100
S-VHS
R101 100
R102 100
CIN
R103 100
R104 100
D101 LT-9200D
D102 LT-9200D
D103 LT-9200N
D104 LT-9200N
REW
FF
EJECT
STOP
DIAL
ITEM
DATA
PLAY
PAUSE
MRKA
MRKB
SEARCH
DUAL
PRGREW
RPGRP
S104
RCD/MED
PLAYER
Q117 DTC144EK
Q118 DTA144EK
Q119 DTC144EK
Q120 DTA144EK
Q121 DTC144EK
Q122 DTA144EK
Q123 DTC144EK
Q124 DTA144EK
D134 GL-SHD8
D135 GL-SHD8
D136 GL-SHD8
D137 GL-SHD8
D139 TLU0154
R138 100
R139 100
R141 100
R142 100
R143 100
C118 0.0047
C119 0.0047
102
103

DP-166

1-643-491-11, 12 (1)
SVP-9020

MARK	CHANGED INFORMATION	SERIAL NO.
*1	IC101 MC68HC05C8 → MC68HC05C4B	J:10011- UC:10021-
*2	C108 16V → 25V	J:10111- UC:10221-

NOTE;* mark is NTSC (SVP-9000) No-Mount

KY-229C

1-643-482-11, 12 (1)
SVP-9020

DP-166 ; COUNTER DISPLAY
KY-229C ; FUNCTION KEY/LED/SWITCH

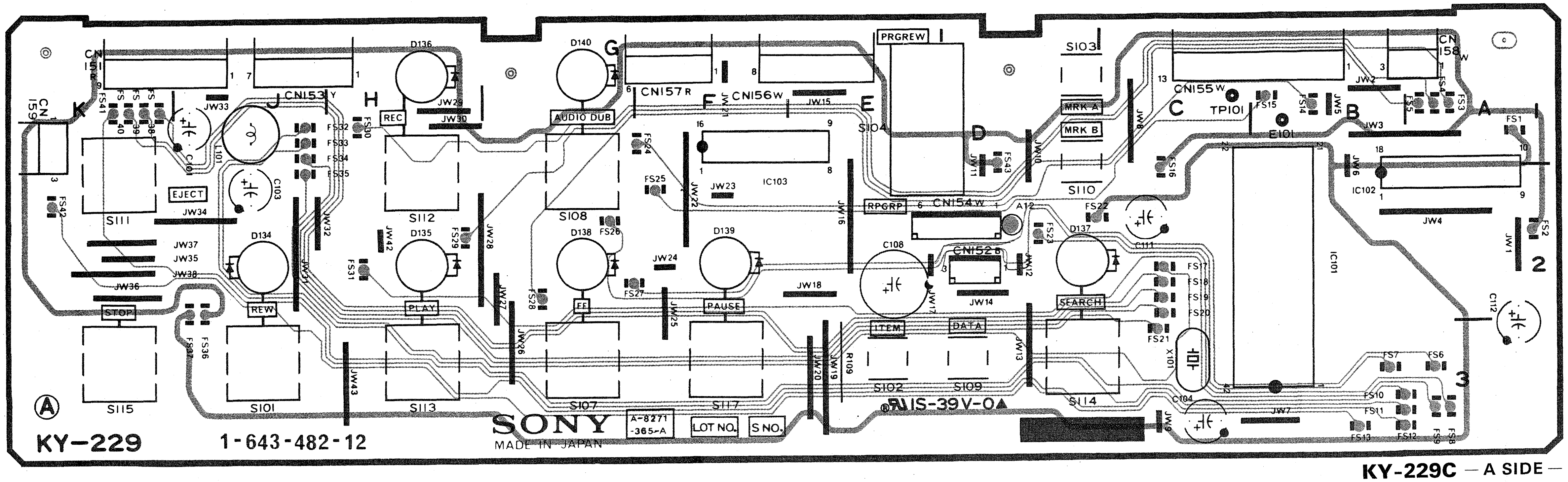
Serial No. 10231 and higher

Serial No. 10381 and higher

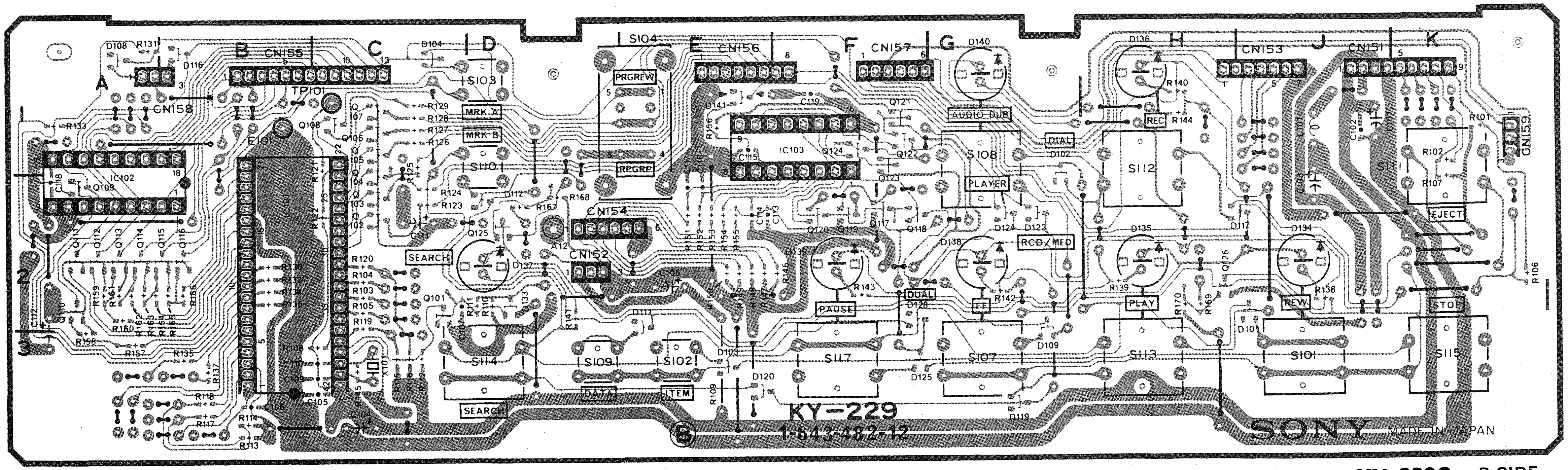
KY-229C (1-643-482-12)

CN151	K-1
CN152	D-2
CN153	J-1
CN154	E-2
CN155	C-1
CN156	F-1
CN157	F-1
CN158	A-1
CN159	K-1
D101	J-3 *
D102	G-1 *
D103	E-3 *
D104	C-1 *
D108	A-1 *
D109	G-3 *
D111	E-2 *
D112	D-2 *
D116	B-1 *
D117	H-2 *
D119	G-3 *
D120	E-3 *
D123	G-2 *
D124	G-2 *
D125	F-3 *
D133	D-2 *
D134	J-2
D135	H-2
D136	H-1
D137	D-2
D138	G-2
D139	F-2
D140	G-1
D141	E-1 *
E101	B-1
IC101	B-2
IC102	B-2
IC103	F-2
Q101	C-2 *
Q102	C-2 *
Q103	C-2 *
Q104	C-2 *
Q105	C-1 *
Q106	C-1 *
Q107	C-1 *
Q108	B-1 *
Q109	A-2 *
Q110	A-2 *
Q111	A-2 *
Q112	A-2 *
Q113	A-2 *
Q114	A-2 *
Q115	A-2 *
Q116	B-2 *
Q117	F-2 *
Q118	F-2 *
Q119	F-2 *
Q120	F-2 *
Q121	F-1 *
Q122	F-1 *
Q123	F-1 *
Q124	F-1 *
Q125	D-2 *
Q126	H-2 *
S101	J-3
S102	E-3
S103	D-1
S104	E-1
S107	G-3
S108	G-2
S109	D-3
S110	D-2
S111	K-2
S112	H-2
S113	H-3
S114	D-3
S115	K-3
S117	F-3
TP101	C-1
X101	C-3

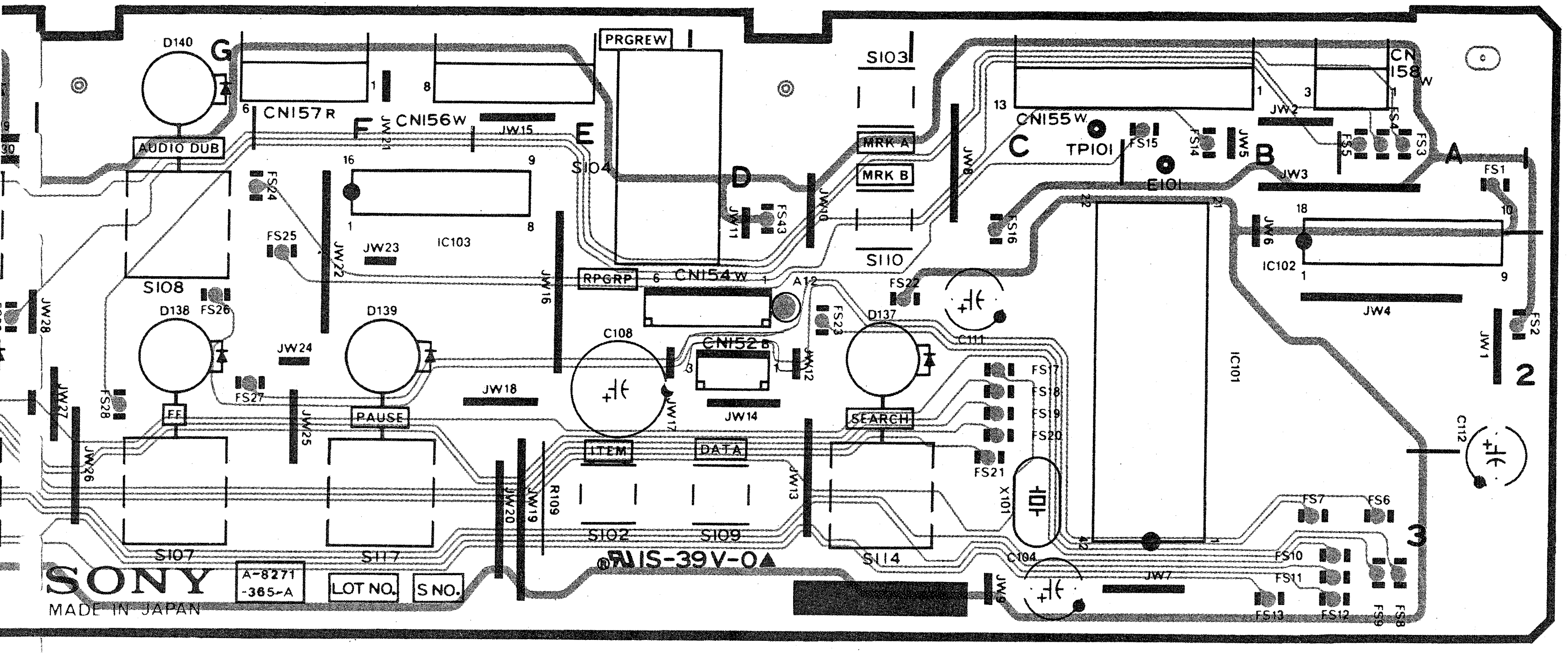
* mark ; B SIDE mount


K
J
H
G
F
E
D
C
B
A
2
3
CN151
CN159
CN153
D136
D140
CN157
CN156
PRGREW
S103
CN155
TP101
E101
MRK A
MRK B
S104
IC103
S110
IC102
IC101
EJECT
S111
REC
S112
AUDIO DUB
S108
RPGRP
CN154
CN152
C108
D134
D135
D138
D139
D137
REW
PLAY
FF
PAUSE
ITEM
DATA
SEARCH
STOP
X101
S115
S101
S113
S107
S117
S102
S109
S114
KY-229
1-643-482-12
SONY
MADE IN JAPAN
A-8271 -365-A
LOT NO.
S NO.

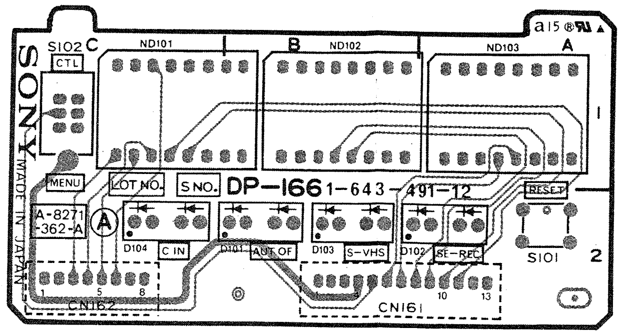
KY-229C — A SIDE —
1-643-482-12 (1)
SVP-9020


A
B
C
D
E
F
G
H
J
K
2
3
CN155
S103
S104
CN156
CN157
D140
D136
CN153
CN151
CN158
TP101
E101
IC102
IC101
MRK A
MRK B
S110
PRGREW
RPGRP
IC103
AUDIO DUB
S108
DIAL
PLAYER
REC
S112
S111
CN159
EJECT
CN154
CN152
SEARCH
RCD/MED
PAUSE
FF
PLAY
REW
STOP
DUAL
S114
S109
S102
S117
S107
S113
S101
S115
DATA
ITEM
SEARCH
KY-229
1-643-482-12
SONY
MADE IN JAPAN

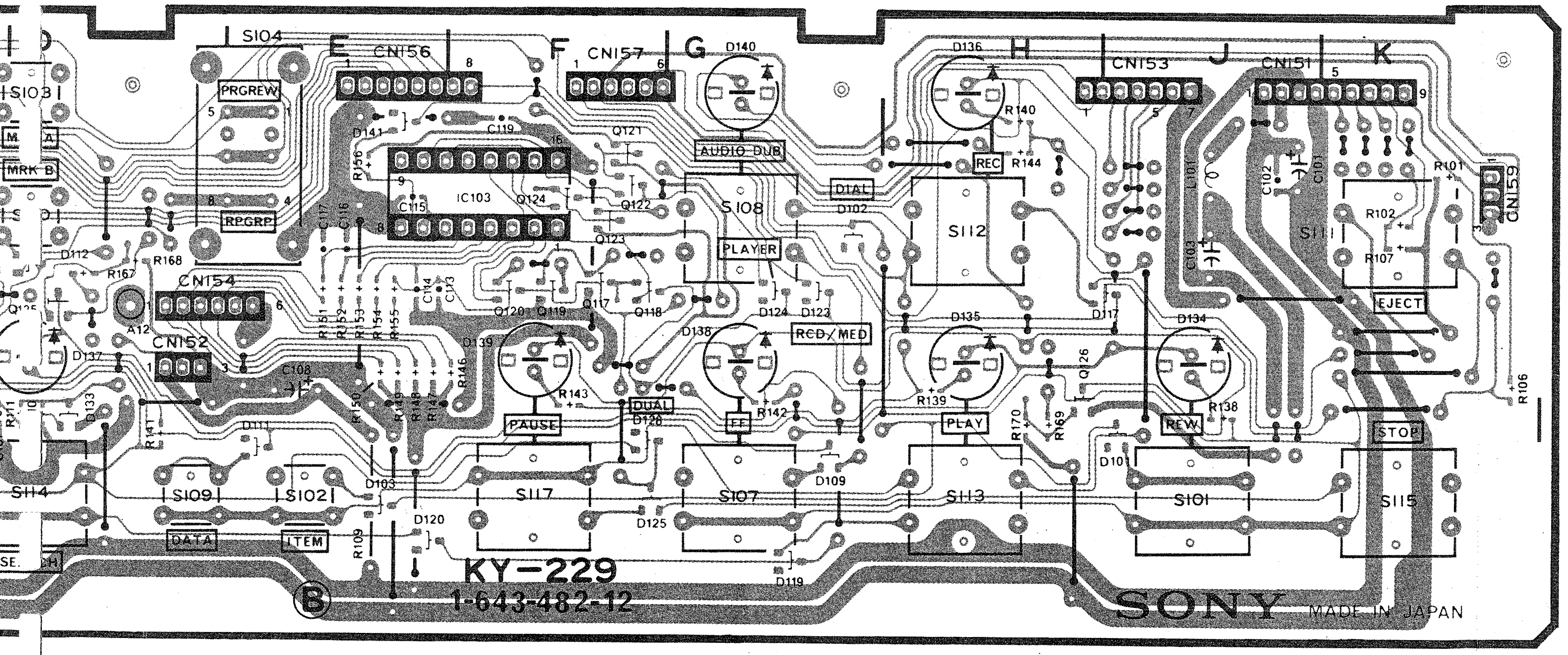
KY-229C — B SIDE —
1-643-482-12 (1)
SVP-9020


SONY
MADE IN JAPAN
A-8271-365-A
LOT NO.
S NO.
IS-39V-0
IC101
IC102
IC103
CN154
CN155
CN156
CN157
CN158
TP101
E101
AUDIO DUB
PRGREW
MRK A
MRK B
RPGRP
ITEM
DATA
SEARCH
PAUSE
FF
S102
S103
S104
S107
S108
S109
S110
S114
S117

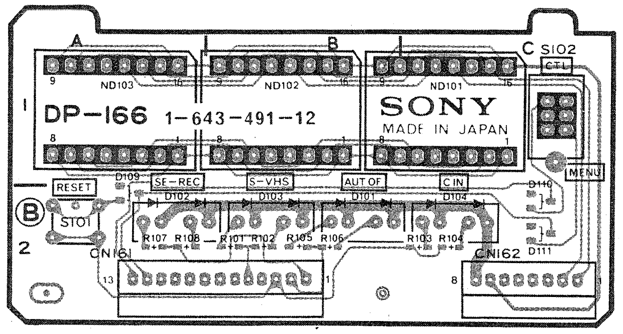
KY-229C — A SIDE —
1-643-482-12 (1)
SVP-9020


SONY
MADE IN JAPAN
DP-166 1-643-491-12
A-8271-362-A
ND101
ND102
ND103
S101
S102
CTL
MENU
LOT NO.
S NO.
RESET
C IN
AUT OF
S-VHS
SE-REC
CN161
CN162

DP-166 — A SIDE —
1-643-491-12 (1)
SVP-9020


KY-229
1-643-482-12
SONY
MADE IN JAPAN
IC103
CN151
CN152
CN153
CN154
CN156
CN157
CN159
PRGREW
RPGRP
AUDIO DUB
PLAYER
DIAL
REC
RCD/MED
EJECT
STOP
REW
PLAY
PAUSE
FF
DUAL
ITEM
DATA
S101
S102
S104
S107
S108
S109
S111
S112
S113
S115
S117

KY-229C — B SIDE —
1-643-482-12 (1)
SVP-9020


DP-166 1-643-491-12
SONY
MADE IN JAPAN
ND101
ND102
ND103
S101
S102
CTL
MENU
RESET
SE-REC
S-VHS
AUT OF
C IN
CN161
CN162

DP-166 — B SIDE —
1-643-491-12 (1)
SVP-9020

DP-166; COUNTER DISPLAY
KY-229C; FUNCTION KEY/LED/SWITCH

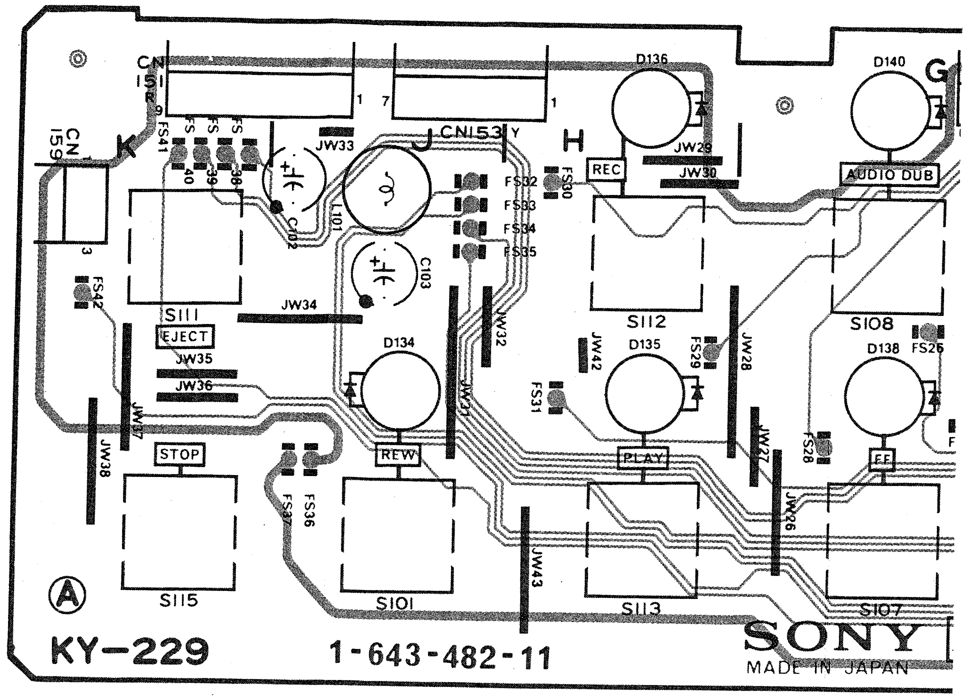
Serial No. 10001-10230

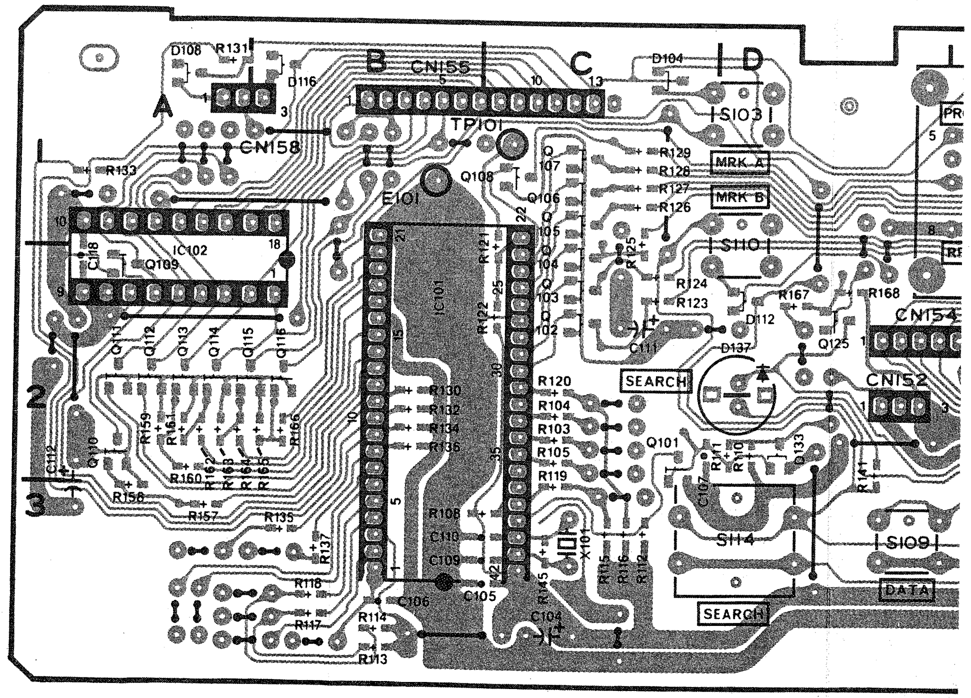
Serial No. 10001-10380

KY-229C (1-643-482-11)

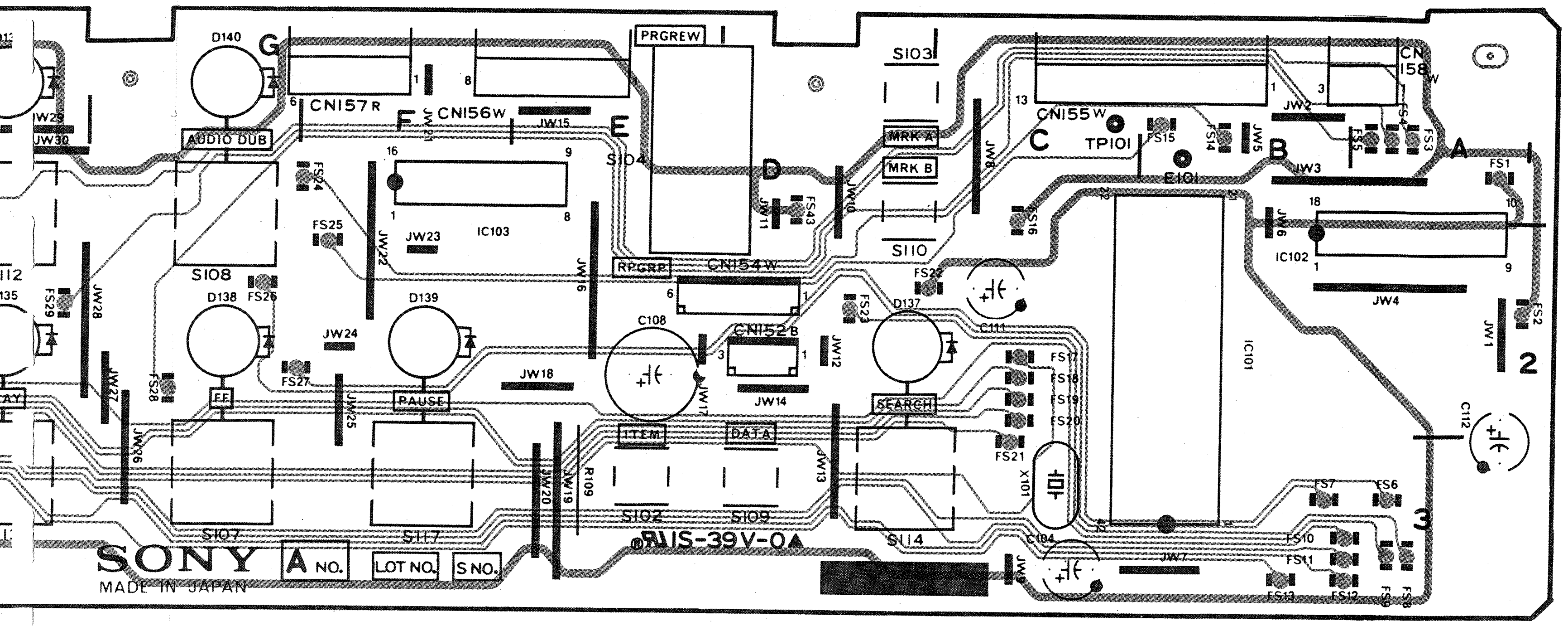
CN151	K-1
CN152	D-2
CN153	J-1
CN154	E-2
CN155	C-1
CN156	F-1
CN157	F-1
CN158	A-1
CN159	K-1
D101	J-3 *
D102	G-1 *
D103	E-3 *
D104	C-1 *
D108	A-1 *
D109	G-3 *
D111	E-2 *
D112	D-2 *
D116	B-1 *
D117	H-2 *
D119	G-3 *
D120	E-3 *
D123	G-2 *
D124	G-2 *
D125	F-3 *
D133	D-2 *
D134	J-2
D135	H-2
D136	H-1
D137	D-2
D138	G-2
D139	F-2
D140	G-1
D141	E-1 *
E101	B-1
IC101	B-2
IC102	B-2
IC103	F-2
Q101	C-2 *
Q102	C-2 *
Q103	C-2 *
Q104	C-2 *
Q105	C-1 *
Q106	C-1 *
Q107	C-1 *
Q108	B-1 *
Q109	A-2 *
Q110	A-2 *
Q111	A-2 *
Q112	A-2 *
Q113	A-2 *
Q114	A-2 *
Q115	A-2 *
Q116	B-2 *
Q117	F-2 *
Q118	F-2 *
Q119	F-2 *
Q120	F-2 *
Q121	F-1 *
Q122	F-1 *
Q123	F-1 *
Q124	F-1 *
Q125	D-2 *
Q126	H-2 *
S101	J-3
S102	E-3
S103	D-1
S104	E-1
S107	G-3
S108	G-2
S109	D-3
S110	D-2
S111	K-2
S112	H-2
S113	H-3
S114	D-3
S115	K-3
S117	F-3
TP101	C-1
X101	C-3

* mark; B SIDE mount

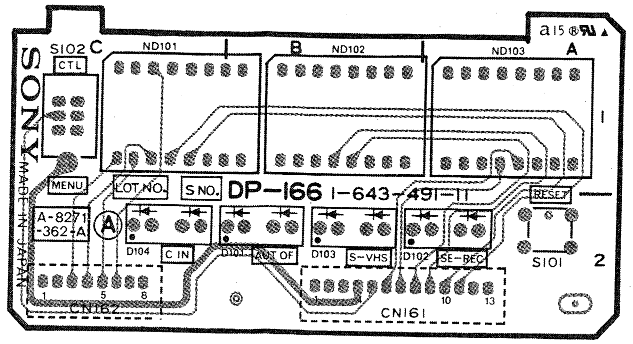

CN151
CN159
K
J
CN153
H
G
D136
D140
JW29
JW30
REC
AUDIO DUB
L101
C102
C103
FS41
FS40
FS39
FS38
FS42
FS32
FS33
FS34
FS35
FS30
JW33
JW34
JW35
JW36
JW32
JW37
JW38
JW28
JW42
JW27
JW26
JW43
S111
EJECT
D134
D135
D138
S112
S108
FS29
FS26
FS31
FS28
FS36
FS37
STOP
REW
PLAY
FF
S115
S101
S113
S107
A
KY-229
1-643-482-11
SONY
MADE IN JAPAN


A
B
C
D
2
3
D108
R131
D116
CN155
CN158
D104
TP101
E101
Q108
R133
IC102
IC101
Q109
Q110
Q111
Q112
Q113
Q114
Q115
Q116
S103
MRK A
MRK B
S110
R129
R128
R127
R126
R125
R124
R123
R167
R168
D112
D137
Q125
C111
CN154
CN152
SEARCH
R120
R104
R103
R105
R119
Q101
D133
R130
R132
R134
R136
R159
R160
R157
R158
R135
R137
R118
R117
R114
R113
R108
C110
C109
C106
C105
C104
X101
S114
S109
DATA
SEARCH
C112

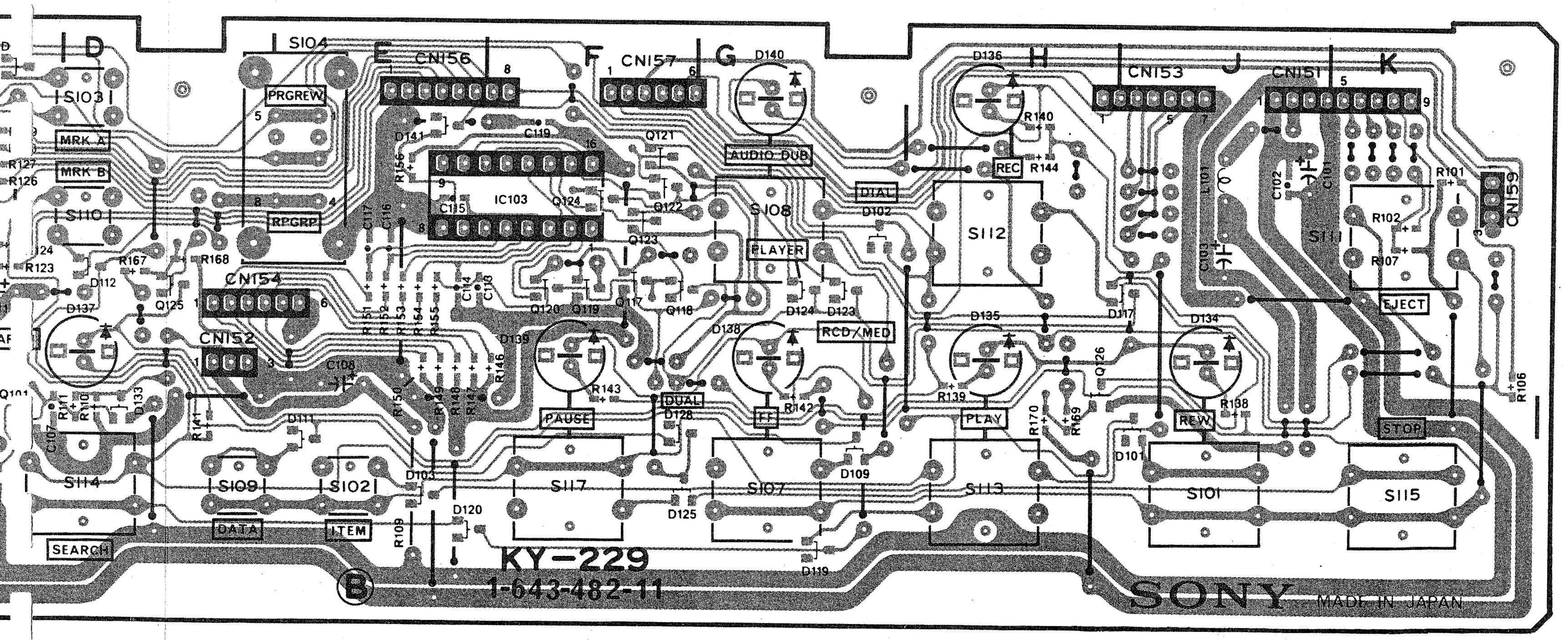
DP-166, KY-229C


SONY
MADE IN JAPAN
A NO.
LOT NO.
S NO.
IS-39V-0
AUDIO DUB
PRGREW
RPGRP
MRK A
MRK B
FF
PAUSE
ITEM
DATA
SEARCH
CN157R
CN156W
CN155W
CN154W
CN152B
IC101
IC102
IC103
TP101
E101
X101
C108
C111
C112
C104
S102
S103
S104
S107
S108
S109
S110
S114
S117
D137
D138
D139
D140
A
B
C
D
E
F
G
1
2
3

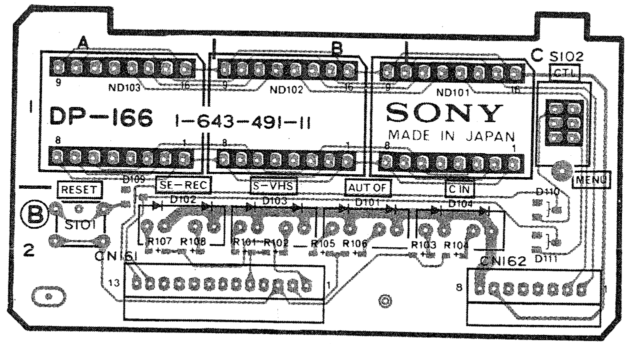
KY-229C — A SIDE —
1-643-482-11 (1)
SVP-9020


SONY
MADE IN JAPAN
S102
CTL
ND101
ND102
ND103
MENU
LOT NO.
S NO.
DP-166 1-643-491-11
RESET
A-8271-362-A
C IN
AUT OF
S-VHS
SE-REC
D101
D102
D103
D104
S101
CN161
CN162
A
B
C
1
2

DP-166 — A SIDE —
1-643-491-11 (1)
SVP-9020


KY-229
1-643-482-11
SONY
MADE IN JAPAN
CN156
CN157
CN153
CN151
CN154
CN152
CN159
IC103
PRGREW
RPGRP
MRK A
MRK B
AUDIO DUB
DIAL
PLAYER
REC
RCD/MED
DUAL
PAUSE
FF
PLAY
REW
EJECT
STOP
DATA
ITEM
SEARCH
S101
S102
S103
S104
S107
S108
S109
S110
S111
S112
S113
S114
S115
S117
D134
D135
D136
D137
D138
D139
D140
B
D
E
F
G
H
I
J
K

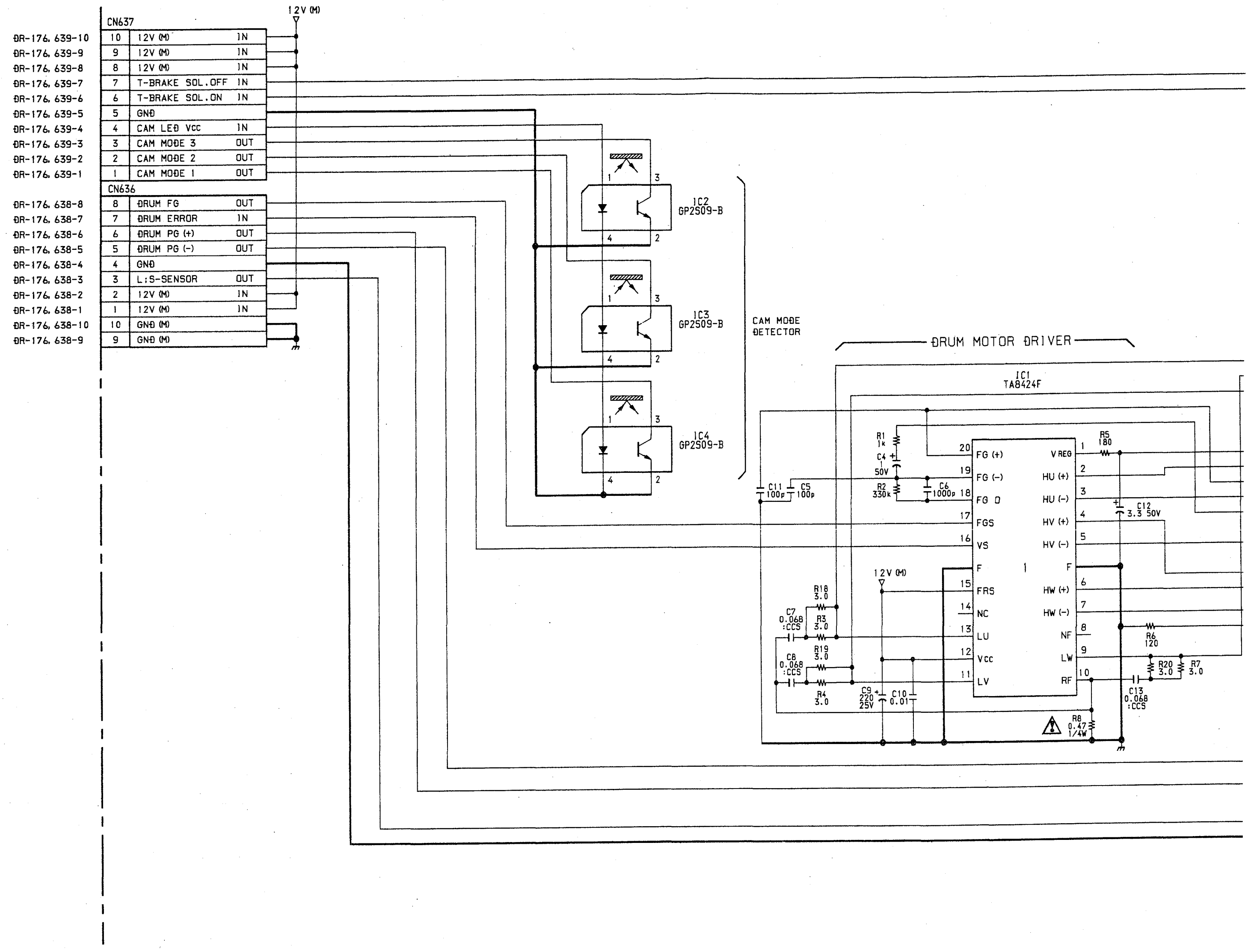
KY-229C — B SIDE —
1-643-482-11 (1)
SVP-9020


DP-166 1-643-491-11
SONY
MADE IN JAPAN
ND101
ND102
ND103
S102
CTL
MENU
RESET
SE-REC
S-VHS
AUT OF
C IN
S101
CN161
CN162
D101
D102
D103
D104
A
B
C
2

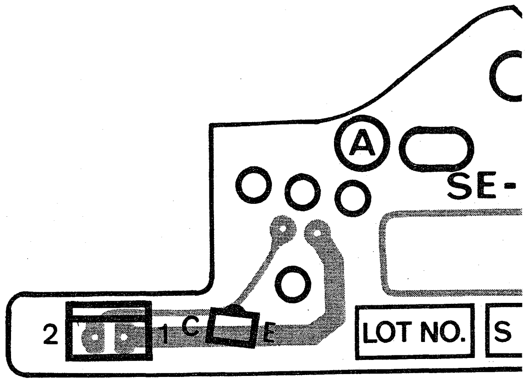
DP-166 — B SIDE —
1-643-491-11 (1)
SVP-9020

14-43(a)

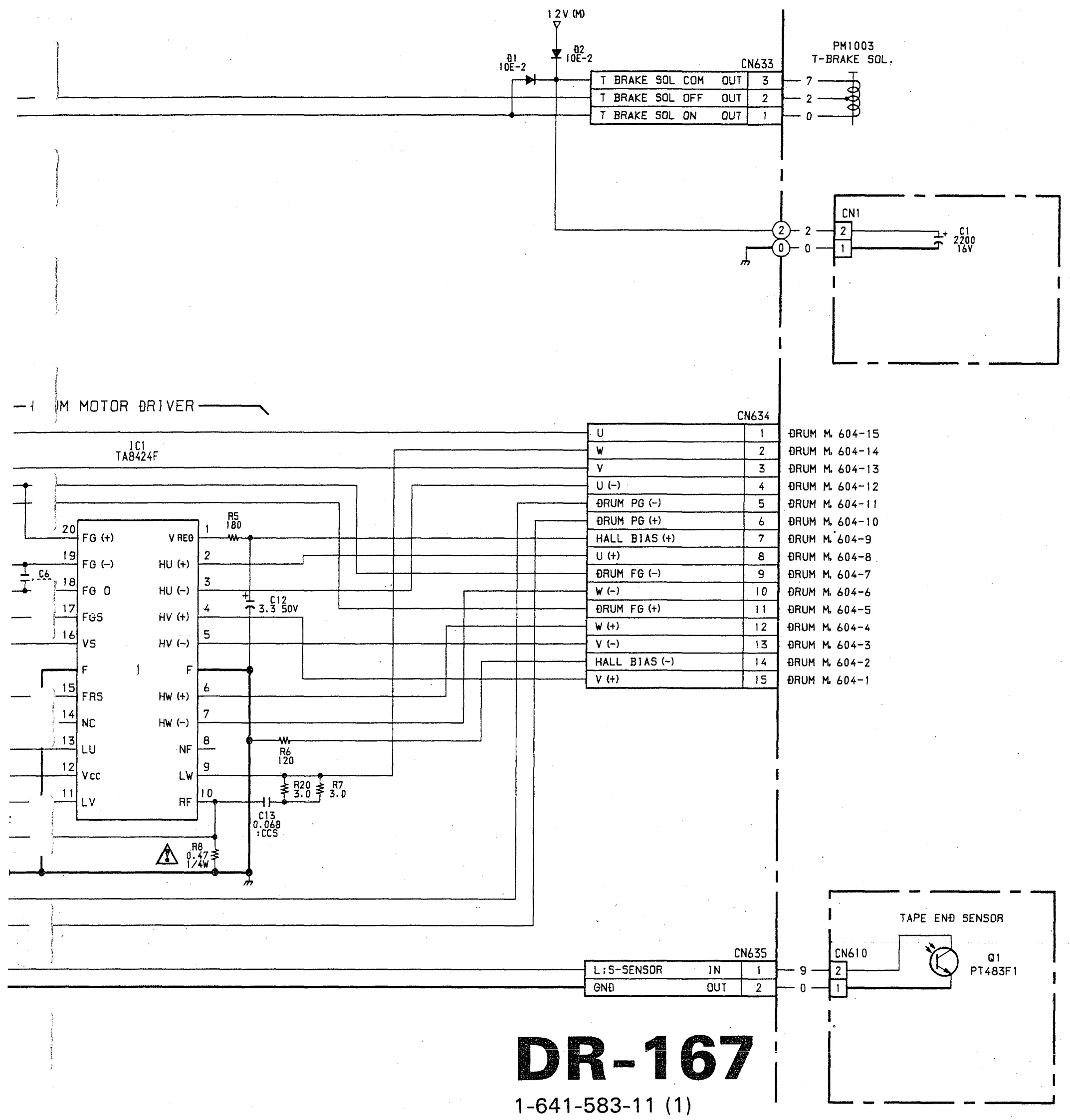
DR-167; CAM MODE DETECT & DRUM MOTOR DRIVER
DUS-544; CAPACITOR FOR T-BRAKE SOLENOID
SE-151; TAPE END SENSOR


CN637
DR-176, 639-10 | 10 | 12V (M) | IN
DR-176, 639-9 | 9 | 12V (M) | IN
DR-176, 639-8 | 8 | 12V (M) | IN
DR-176, 639-7 | 7 | T-BRAKE SOL.OFF | IN
DR-176, 639-6 | 6 | T-BRAKE SOL.ON | IN
DR-176, 639-5 | 5 | GND
DR-176, 639-4 | 4 | CAM LED Vcc | IN
DR-176, 639-3 | 3 | CAM MODE 3 | OUT
DR-176, 639-2 | 2 | CAM MODE 2 | OUT
DR-176, 639-1 | 1 | CAM MODE 1 | OUT
CN636
DR-176, 638-8 | 8 | DRUM FG | OUT
DR-176, 638-7 | 7 | DRUM ERROR | IN
DR-176, 638-6 | 6 | DRUM PG (+) | OUT
DR-176, 638-5 | 5 | DRUM PG (-) | OUT
DR-176, 638-4 | 4 | GND
DR-176, 638-3 | 3 | L;S-SENSOR | OUT
DR-176, 638-2 | 2 | 12V (M) | IN
DR-176, 638-1 | 1 | 12V (M) | IN
DR-176, 638-10 | 10 | GND (M)
DR-176, 638-9 | 9 | GND (M)
12V (M)
IC2 GP2S09-B
IC3 GP2S09-B
IC4 GP2S09-B
CAM MODE DETECTOR
DRUM MOTOR DRIVER
IC1 TA8424F
20 FG (+)
19 FG (-)
18 FG O
17 FGS
16 VS
F
15 FRS
14 NC
13 LU
12 Vcc
11 LV
1 V REG
2 HU (+)
3 HU (-)
4 HV (+)
5 HV (-)
F
6 HW (+)
7 HW (-)
8 NF
9 LW
10 RF
R1 1k
C4 1 50V
R2 330k
C6 1000p
C11 100p
C5 100p
R5 180
C12 3.3 50V
R6 120
R20 3.0
R7 3.0
C13 0.068 :CCS
R8 0.47 1/4W
R18 3.0
R3 3.0
R19 3.0
R4 3.0
C7 0.068 :CCS
C8 0.068 :CCS
C9 220 25V
C10 0.01
12V (M)

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.


A
SE-
2
1
C
E
LOT NO.
S

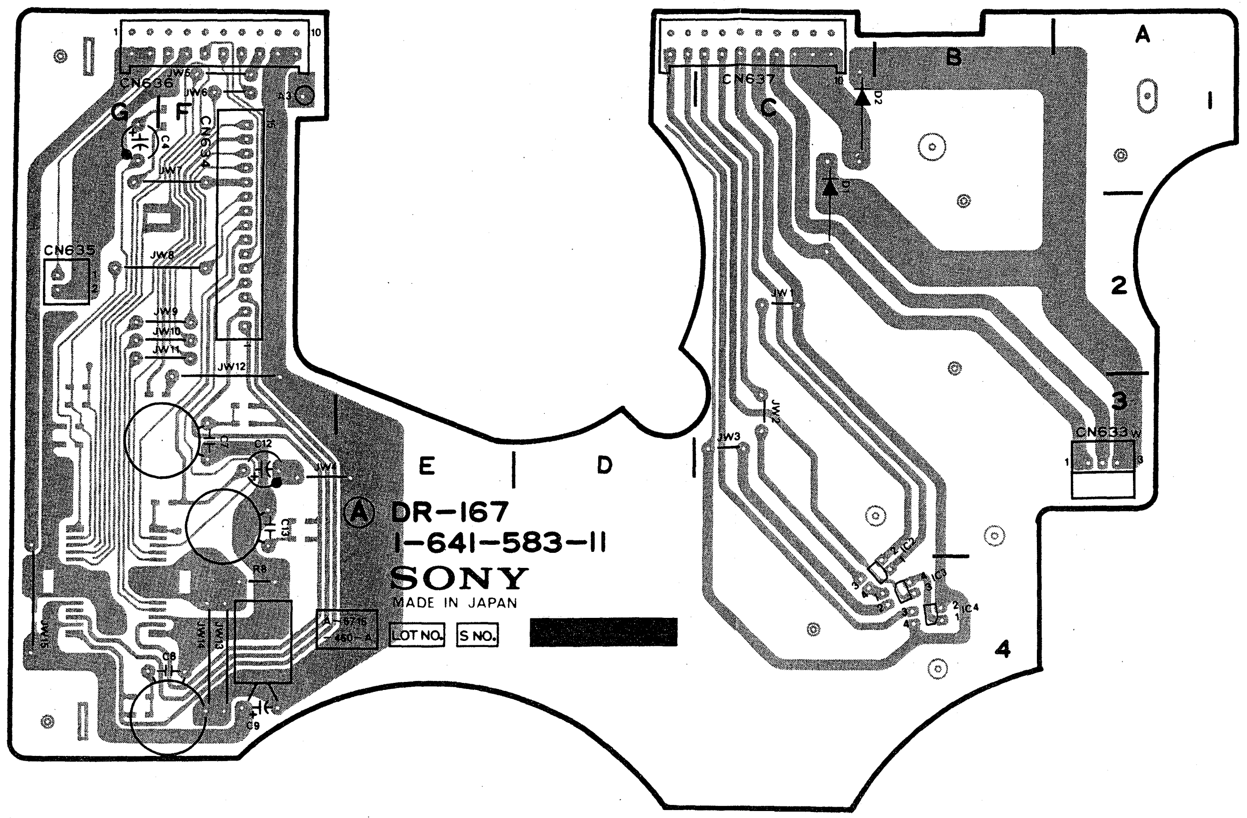
SE-151 — A SI
1-637-245-13 (1)
SVP-9020


12V (M)
D1 10E-2
D2 10E-2
CN633
T BRAKE SOL COM OUT 3
T BRAKE SOL OFF OUT 2
T BRAKE SOL ON OUT 1
PM1003 T-BRAKE SOL.
CN1
C1 2200 16V
M MOTOR DRIVER
IC1 TA8424F
FG (+)
FG (-)
FG 0
FGS
VS
F
FRS
NC
LU
Vcc
LV
V REG
HU (+)
HU (-)
HV (+)
HV (-)
HW (+)
HW (-)
NF
LW
RF
R5 180
C12 3.3 50V
R6 120
R20 3.0
R7 3.0
C13 0.068 :CCS
R8 0.47 1/4W
C6
CN634
U 1 DRUM M. 604-15
W 2 DRUM M. 604-14
V 3 DRUM M. 604-13
U (-) 4 DRUM M. 604-12
DRUM PG (-) 5 DRUM M. 604-11
DRUM PG (+) 6 DRUM M. 604-10
HALL BIAS (+) 7 DRUM M. 604-9
U (+) 8 DRUM M. 604-8
DRUM FG (-) 9 DRUM M. 604-7
W (-) 10 DRUM M. 604-6
DRUM FG (+) 11 DRUM M. 604-5
W (+) 12 DRUM M. 604-4
V (-) 13 DRUM M. 604-3
HALL BIAS (-) 14 DRUM M. 604-2
V (+) 15 DRUM M. 604-1
CN635
L:S-SENSOR IN 1
GND OUT 2
CN610
TAPE END SENSOR
Q1 PT483F1

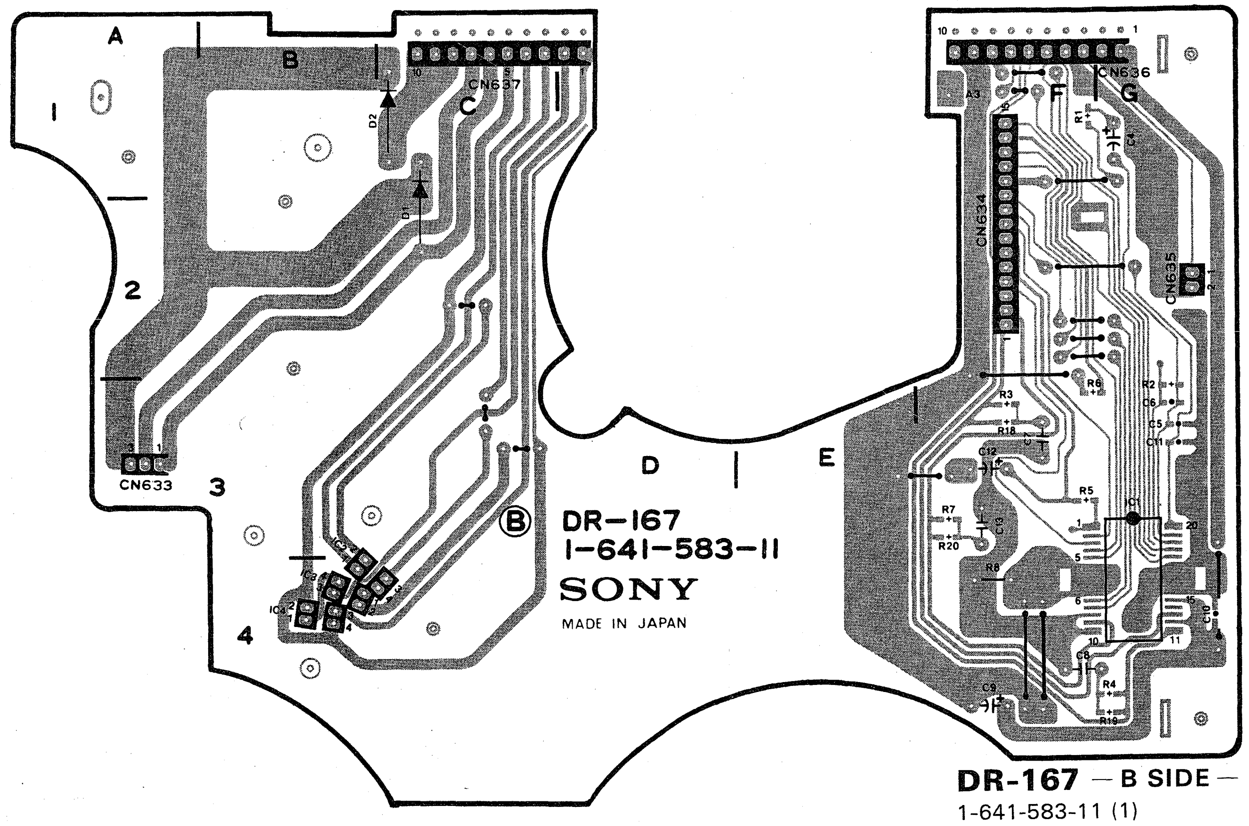
DUS-544
1-644-095-12 (1)
SVP-9020

DR-167
1-641-583-11 (1)
SVP-9020

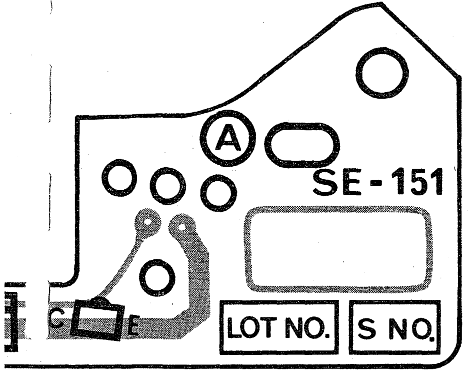
SE-151
1-637-245-13 (1)
SVP-9020


CN636
CN634
CN635
CN637
CN633
JW1
JW2
JW3
A
B
C
D
E
F
G
1
2
3
4
Ⓐ DR-167
1-641-583-11
SONY
MADE IN JAPAN
LOT NO.
S NO.

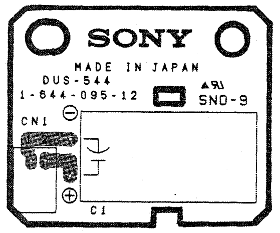
DR-167 — A SIDE —
1-641-583-11 (1)
SVP-9020


A
B
C
D
E
F
G
1
2
3
4
CN637
CN636
CN634
CN635
CN633
Ⓑ DR-167
1-641-583-11
SONY
MADE IN JAPAN

DR-167 — B SIDE —
1-641-583-11 (1)
SVP-9020

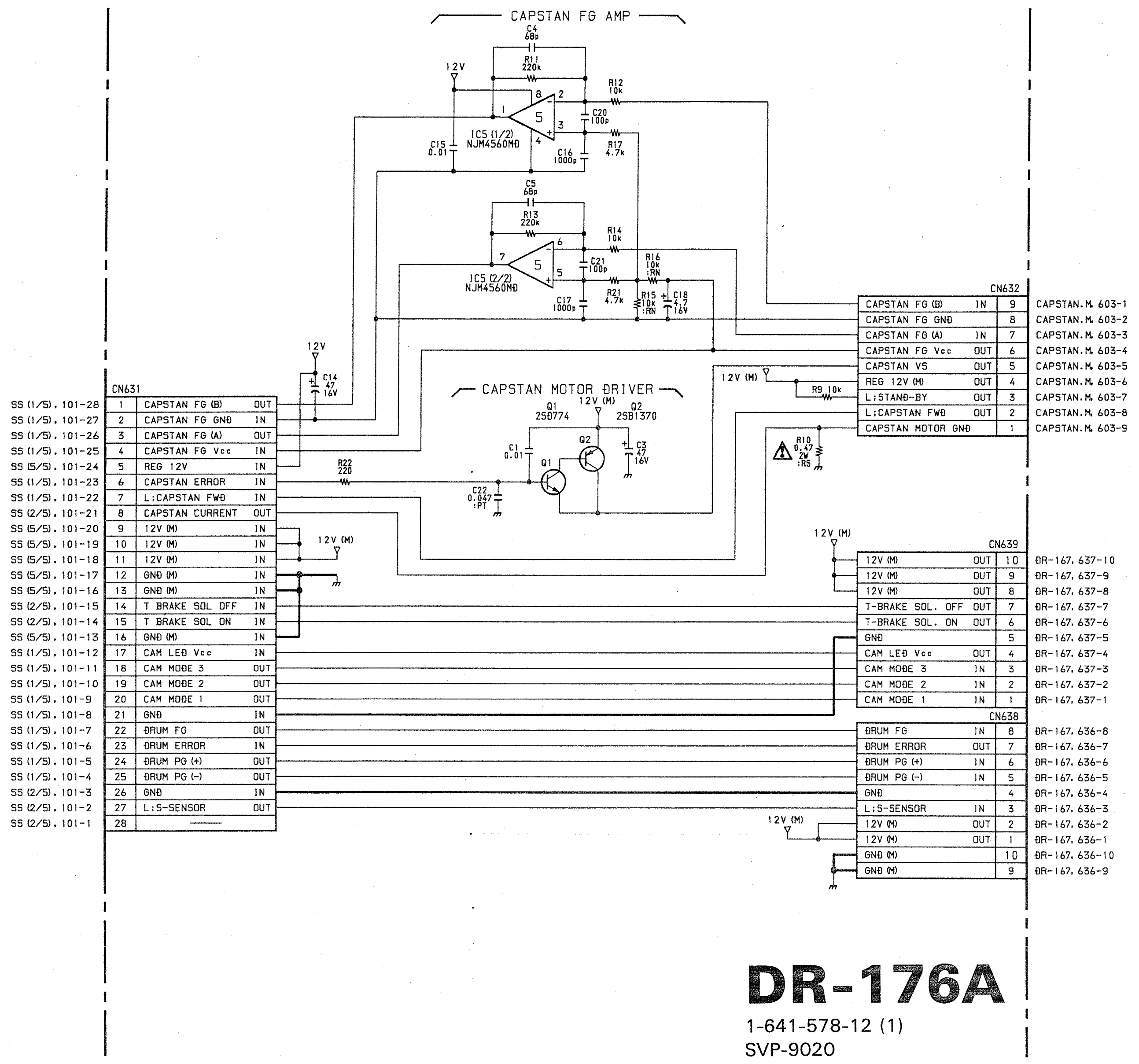

Ⓐ
SE-151
LOT NO.
S NO.
C
E

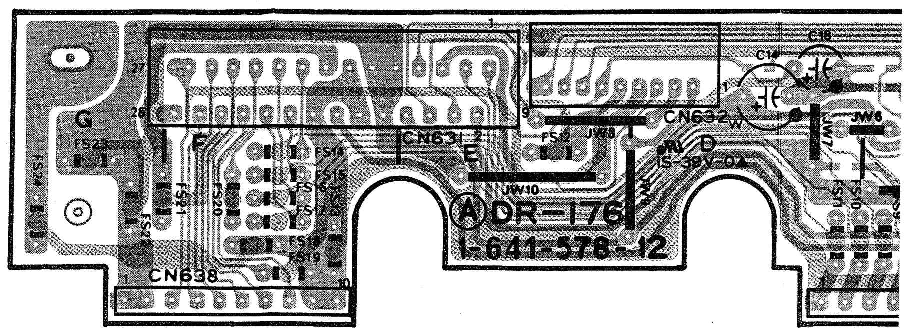
SE-151 — A SIDE —
1-637-245-13 (1)
SVP-9020

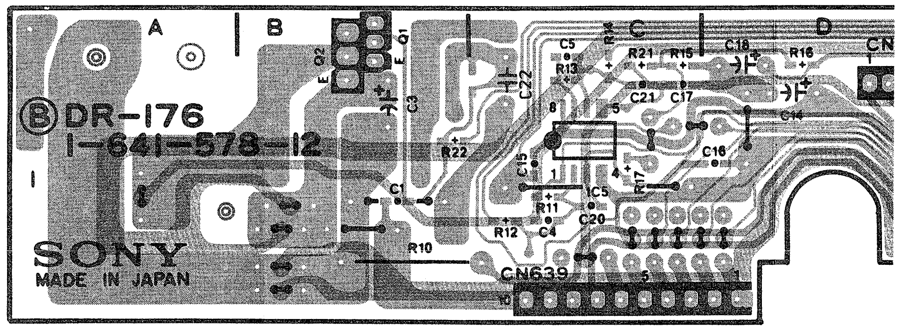

SONY
MADE IN JAPAN
DUS-544
1-644-095-12
SNO-9
CN1
C1

DUS-544 — A SIDE —
1-644-095-12 (1)
SVP-9020

DR-176A; CAPSTAN FG AMP & CAPSTAN MOTOR DRIVER


CAPSTAN FG AMP
C4 68p
R11 220k
12V
R12 10k
C20 100p
IC5 (1/2) NJM4560MD
C15 0.01
C16 1000p
R17 4.7k
C5 68p
R13 220k
R14 10k
C21 100p
R16 10k :RN
IC5 (2/2) NJM4560MD
C17 1000p
R21 4.7k
R15 10k :RN
C18 4.7 16V
CAPSTAN MOTOR DRIVER
12V (M)
Q1 2SD774
Q2 2SB1370
C1 0.01
C3 47 16V
C22 0.047 :PT
R22 220
C14 47 16V
R9 10k
R10 0.47 2W :RS
CN631
SS (1/5), 101-28 | 1 | CAPSTAN FG (B) | OUT
SS (1/5), 101-27 | 2 | CAPSTAN FG GND | IN
SS (1/5), 101-26 | 3 | CAPSTAN FG (A) | OUT
SS (1/5), 101-25 | 4 | CAPSTAN FG Vcc | IN
SS (5/5), 101-24 | 5 | REG 12V | IN
SS (1/5), 101-23 | 6 | CAPSTAN ERROR | IN
SS (1/5), 101-22 | 7 | L:CAPSTAN FWD | IN
SS (2/5), 101-21 | 8 | CAPSTAN CURRENT | OUT
SS (5/5), 101-20 | 9 | 12V (M) | IN
SS (5/5), 101-19 | 10 | 12V (M) | IN
SS (5/5), 101-18 | 11 | 12V (M) | IN
SS (5/5), 101-17 | 12 | GND (M) | IN
SS (5/5), 101-16 | 13 | GND (M) | IN
SS (2/5), 101-15 | 14 | T BRAKE SOL OFF | IN
SS (2/5), 101-14 | 15 | T BRAKE SOL ON | IN
SS (5/5), 101-13 | 16 | GND (M) | IN
SS (1/5), 101-12 | 17 | CAM LED Vcc | IN
SS (1/5), 101-11 | 18 | CAM MODE 3 | OUT
SS (1/5), 101-10 | 19 | CAM MODE 2 | OUT
SS (1/5), 101-9 | 20 | CAM MODE 1 | OUT
SS (1/5), 101-8 | 21 | GND | IN
SS (1/5), 101-7 | 22 | DRUM FG | OUT
SS (1/5), 101-6 | 23 | DRUM ERROR | IN
SS (1/5), 101-5 | 24 | DRUM PG (+) | OUT
SS (1/5), 101-4 | 25 | DRUM PG (−) | OUT
SS (2/5), 101-3 | 26 | GND | IN
SS (2/5), 101-2 | 27 | L:S-SENSOR | OUT
SS (2/5), 101-1 | 28 | ——
CN632
CAPSTAN FG (B) | IN | 9 | CAPSTAN.M, 603-1
CAPSTAN FG GND | 8 | CAPSTAN.M, 603-2
CAPSTAN FG (A) | IN | 7 | CAPSTAN.M, 603-3
CAPSTAN FG Vcc | OUT | 6 | CAPSTAN.M, 603-4
CAPSTAN VS | OUT | 5 | CAPSTAN.M, 603-5
REG 12V (M) | OUT | 4 | CAPSTAN.M, 603-6
L:STAND-BY | OUT | 3 | CAPSTAN.M, 603-7
L:CAPSTAN FWD | OUT | 2 | CAPSTAN.M, 603-8
CAPSTAN MOTOR GND | 1 | CAPSTAN.M, 603-9
CN639
12V (M) | OUT | 10 | DR-167, 637-10
12V (M) | OUT | 9 | DR-167, 637-9
12V (M) | OUT | 8 | DR-167, 637-8
T-BRAKE SOL. OFF | OUT | 7 | DR-167, 637-7
T-BRAKE SOL. ON | OUT | 6 | DR-167, 637-6
GND | 5 | DR-167, 637-5
CAM LED Vcc | OUT | 4 | DR-167, 637-4
CAM MODE 3 | IN | 3 | DR-167, 637-3
CAM MODE 2 | IN | 2 | DR-167, 637-2
CAM MODE 1 | IN | 1 | DR-167, 637-1
CN638
DRUM FG | IN | 8 | DR-167, 636-8
DRUM ERROR | OUT | 7 | DR-167, 636-7
DRUM PG (+) | IN | 6 | DR-167, 636-6
DRUM PG (−) | IN | 5 | DR-167, 636-5
GND | 4 | DR-167, 636-4
L:S-SENSOR | IN | 3 | DR-167, 636-3
12V (M) | OUT | 2 | DR-167, 636-2
12V (M) | OUT | 1 | DR-167, 636-1
GND (M) | 10 | DR-167, 636-10
GND (M) | 9 | DR-167, 636-9
DR-176A
1-641-578-12 (1)
SVP-9020


Ⓐ DR-176
1-641-578-12
CN631
CN632
CN638
IS-39V-0Δ
G
F
E
D

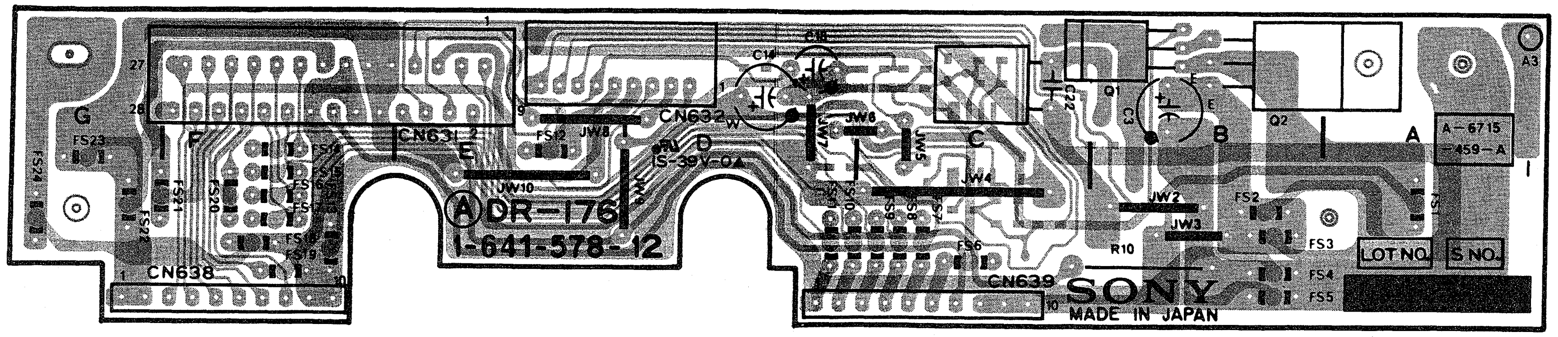

Ⓑ DR-176
1-641-578-12
SONY
MADE IN JAPAN
A
B
C
D
CN639
IC5
Q1
Q2

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

		CN632	
FG (B)	IN	9	CAPSTAN.M. 603-1
FG GND		8	CAPSTAN.M. 603-2
FG (A	IN	7	CAPSTAN.M. 603-3
FG V	OUT	6	CAPSTAN.M. 603-4
VS	OUT	5	CAPSTAN.M. 603-5
M)	OUT	4	CAPSTAN.M. 603-6
BY	OUT	3	CAPSTAN.M. 603-7
N FWD	OUT	2	CAPSTAN.M. 603-8
MOTOR GND		1	CAPSTAN.M. 603-9

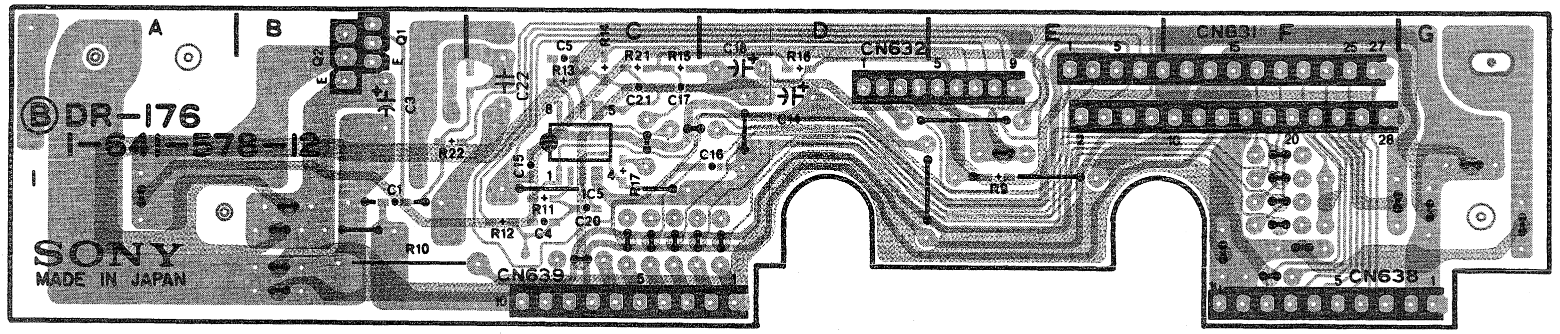
		CN639	
	OUT	10	DR-167. 637-10
	OUT	9	DR-167. 637-9
	OUT	8	DR-167. 637-8
SOL. OFF	OUT	7	DR-167. 637-7
SOL.	OUT	6	DR-167. 637-6
		5	DR-167. 637-5
Vcc	OUT	4	DR-167. 637-4
3	IN	3	DR-167. 637-3
2	IN	2	DR-167. 637-2
1	IN	1	DR-167. 637-1
		CN638	
	IN	8	DR-167. 636-8
OR	OUT	7	DR-167. 636-7
+)	IN	6	DR-167. 636-6
-)	IN	5	DR-167. 636-5
		4	DR-167. 636-4
OR	IN	3	DR-167. 636-3
	OUT	2	DR-167. 636-2
	OUT	1	DR-167. 636-1
		10	DR-167. 636-10
		9	DR-167. 636-9

76A



G
F
E
D
C
B
A
CN631
CN632
CN638
CN639
Q1
Q2
C3
C14
C18
C22
R1
R10
JW2
JW3
JW4
JW5
JW6
JW7
JW8
JW10
FS1
FS2
FS3
FS4
FS5
FS6
FS12
FS20
FS21
FS23
FS24
IS-39V-0A
Ⓐ DR-176
1-641-578-12
A-6715-459-A
A3
LOT NO.
S NO.
SONY
MADE IN JAPAN

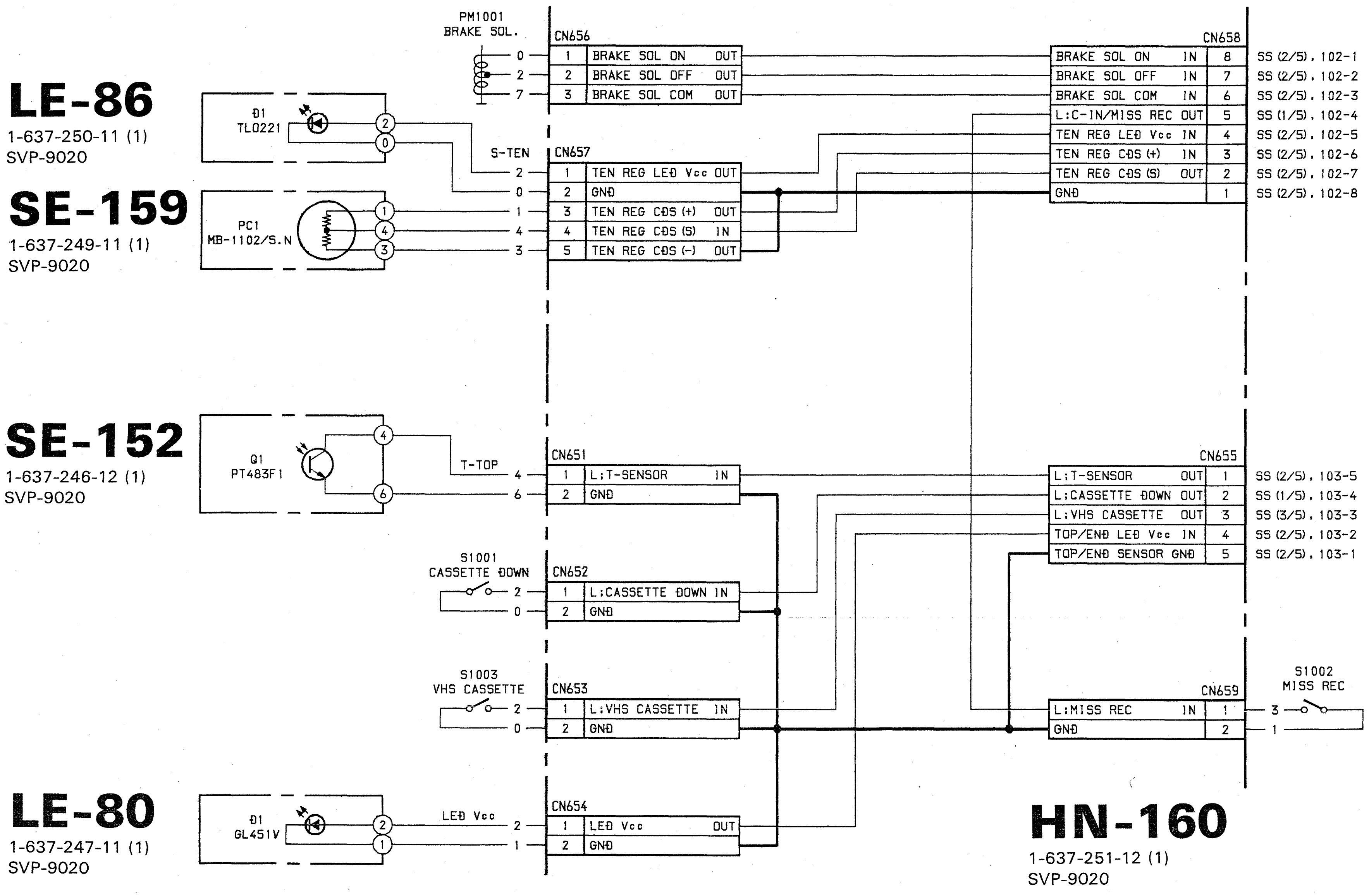
DR-176A — A SIDE —
1-641-578-12 (1)
SVP-9020

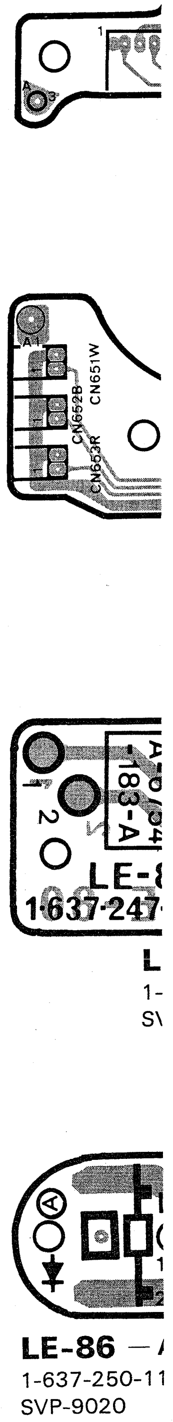


A
B
C
D
E
F
G
Q1
Q2
C1
C3
C4
C5
C14
C15
C16
C17
C18
C20
C21
C22
R9
R10
R11
R12
R13
R15
R16
R17
R21
R22
IC5
CN631
CN632
CN638
CN639
Ⓑ DR-176
1-641-578-12
SONY
MADE IN JAPAN

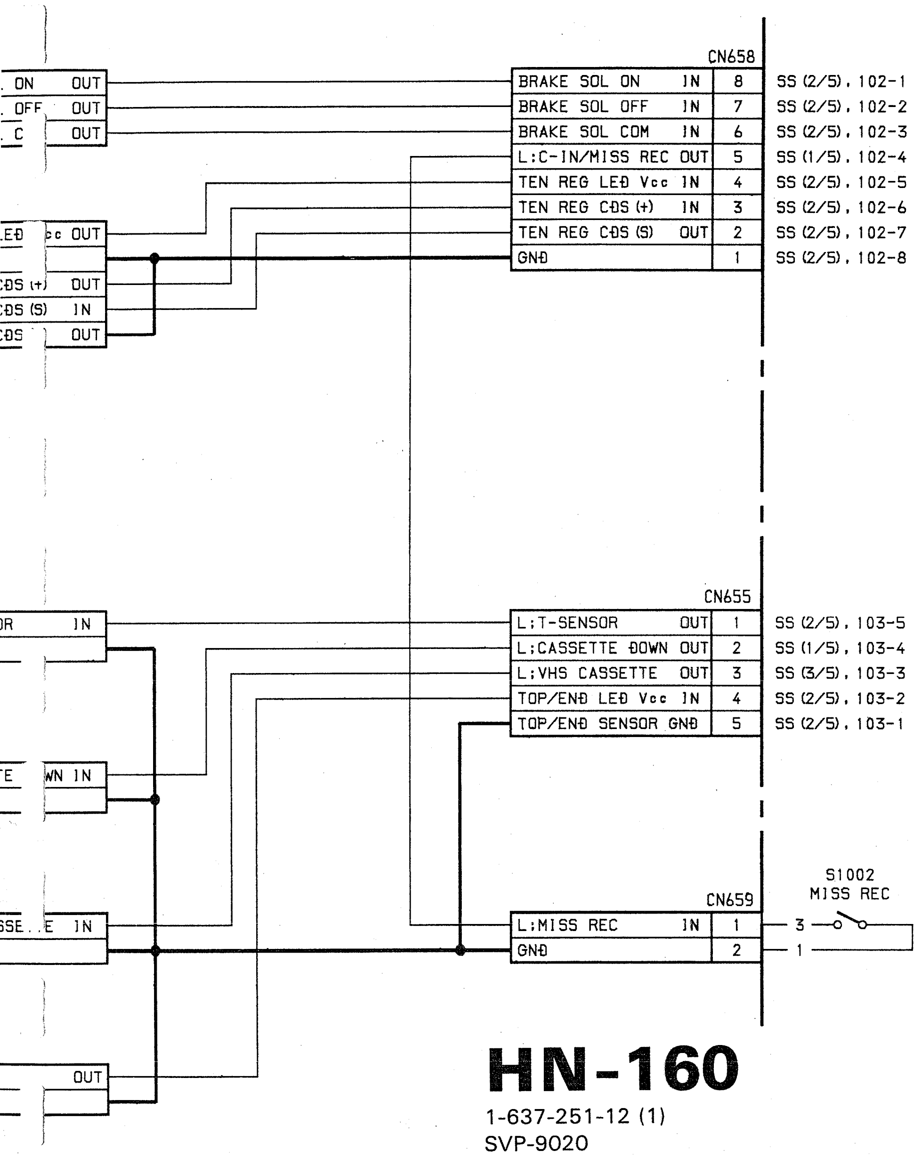
DR-176A — B SIDE —
1-641-578-12 (1)
SVP-9020

HN-160 ; CONNECTION
LE-80 ; TAPE TOP/END LED
LE-86 ; TENSION REGULATOR LED
SE-152 ; TAPE TOP SENSOR
SE-159 ; TENSION REGULATOR & CDS DETECT

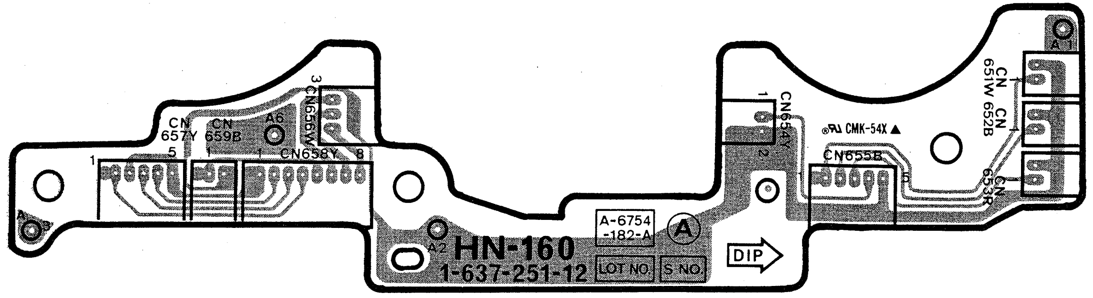

LE-86
1-637-250-11 (1)
SVP-9020
D1
TL0221
SE-159
1-637-249-11 (1)
SVP-9020
PC1
MB-1102/S.N
SE-152
1-637-246-12 (1)
SVP-9020
Q1
PT483F1
T-TOP
LE-80
1-637-247-11 (1)
SVP-9020
D1
GL451V
LED Vcc
PM1001
BRAKE SOL.
S-TEN
S1001
CASSETTE DOWN
S1003
VHS CASSETTE
CN656
BRAKE SOL ON OUT
BRAKE SOL OFF OUT
BRAKE SOL COM OUT
CN657
TEN REG LED Vcc OUT
GND
TEN REG CDS (+) OUT
TEN REG CDS (S) IN
TEN REG CDS (-) OUT
CN651
L;T-SENSOR IN
GND
CN652
L;CASSETTE DOWN IN
GND
CN653
L;VHS CASSETTE IN
GND
CN654
LED Vcc OUT
GND
CN658
BRAKE SOL ON IN 8
BRAKE SOL OFF IN 7
BRAKE SOL COM IN 6
L;C-IN/MISS REC OUT 5
TEN REG LED Vcc IN 4
TEN REG CDS (+) IN 3
TEN REG CDS (S) OUT 2
GND 1
SS (2/5), 102-1
SS (2/5), 102-2
SS (2/5), 102-3
SS (1/5), 102-4
SS (2/5), 102-5
SS (2/5), 102-6
SS (2/5), 102-7
SS (2/5), 102-8
CN655
L;T-SENSOR OUT 1
L;CASSETTE DOWN OUT 2
L;VHS CASSETTE OUT 3
TOP/END LED Vcc IN 4
TOP/END SENSOR GND 5
SS (2/5), 103-5
SS (1/5), 103-4
SS (3/5), 103-3
SS (2/5), 103-2
SS (2/5), 103-1
CN659
L;MISS REC IN 1
GND 2
S1002
MISS REC
HN-160
1-637-251-12 (1)
SVP-9020


CN651W
CN652B
CN653R
183-A
LE-8
1-637-247
LE-86 —
1-637-250-11
SVP-9020

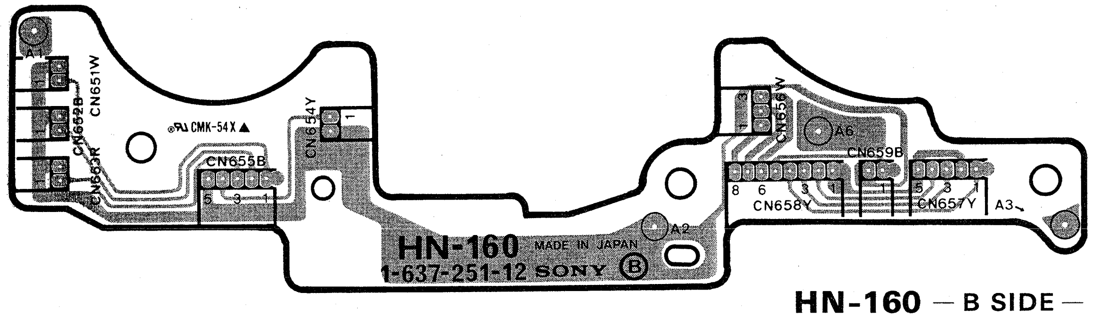
HN-160, LE-80, LE-86, SE-152, SE-159


CN658
. ON OUT
. OFF OUT
. C OUT
LED cc OUT
CDS (+) OUT
CDS (S) IN
CDS OUT
BRAKE SOL ON IN 8 SS (2/5), 102-1
BRAKE SOL OFF IN 7 SS (2/5), 102-2
BRAKE SOL COM IN 6 SS (2/5), 102-3
L:C-IN/MISS REC OUT 5 SS (1/5), 102-4
TEN REG LED Vcc IN 4 SS (2/5), 102-5
TEN REG CDS (+) IN 3 SS (2/5), 102-6
TEN REG CDS (S) OUT 2 SS (2/5), 102-7
GND 1 SS (2/5), 102-8
CN655
OR IN
TE WN IN
SSE E IN
OUT
L:T-SENSOR OUT 1 SS (2/5), 103-5
L:CASSETTE DOWN OUT 2 SS (1/5), 103-4
L:VHS CASSETTE OUT 3 SS (3/5), 103-3
TOP/END LED Vcc IN 4 SS (2/5), 103-2
TOP/END SENSOR GND 5 SS (2/5), 103-1
CN659
S1002
MISS REC
L:MISS REC IN 1 3
GND 2 1

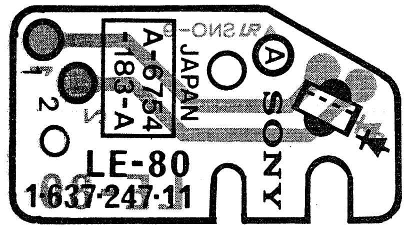
HN-160
1-637-251-12 (1)
SVP-9020


CN 657Y
CN 659B
CN656W
A6
CN658Y
CN654Y
CMK-54X
CN655B
CN 651W
CN 652B
CN 653R
A1
A2
A3
HN-160
1-637-251-12
A-6754 -182-A
Ⓐ
LOT NO.
S NO.
DIP

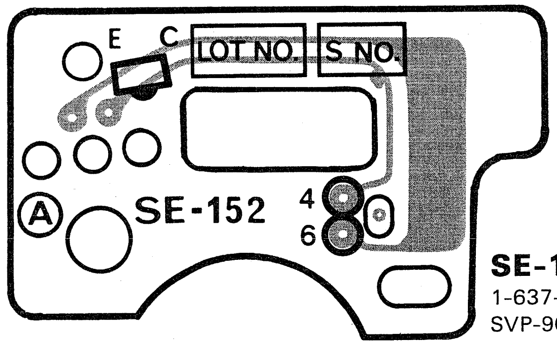
HN-160 — A SIDE —
1-637-251-12 (1)
SVP-9020


A1
CN651W
CN652B
CN653R
CMK-54X
CN655B
CN654Y
CN656W
A6
CN659B
CN658Y
CN657Y
A3
A2
HN-160
MADE IN JAPAN
1-637-251-12 SONY Ⓑ

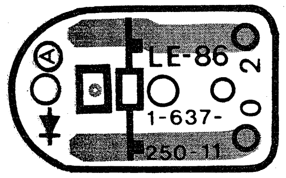
HN-160 — B SIDE —
1-637-251-12 (1)
SVP-9020


1
2
A-6754 -183-A
JAPAN
Ⓐ
SONY
LE-80
1-637-247-11

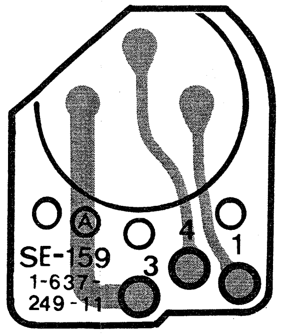
LE-80 — A SIDE —
1-637-247-11 (1)
SVP-9020


E
C
LOT NO.
S NO.
Ⓐ
SE-152
4
6

SE-152 — A SIDE —
1-637-246-12 (1)
SVP-9020


Ⓐ
LE-86
2
0
1-637-
250-11

LE-86 — A SIDE —
1-637-250-11 (1)
SVP-9020

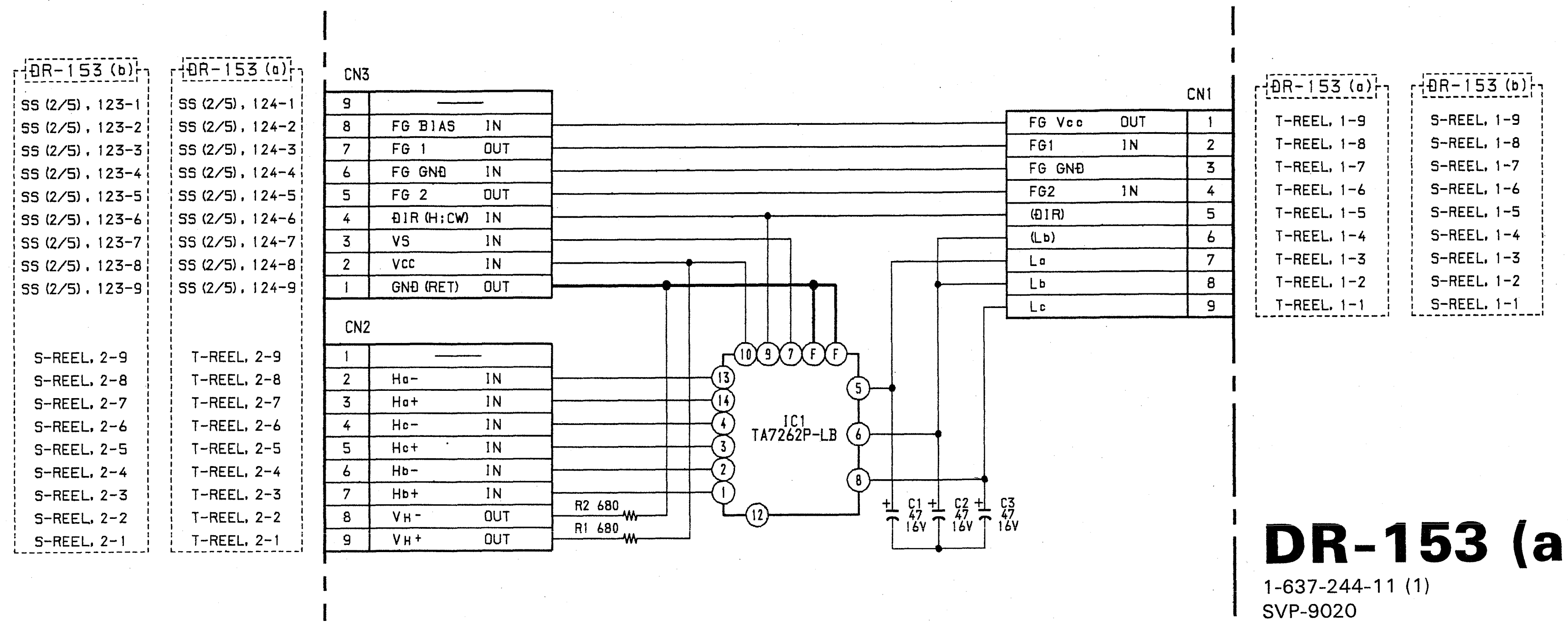

Ⓐ
SE-159
1-637-
249-11
3
4
1

SE-159 — A SIDE —
1-637-249-11 (1)
SVP-9020

14-46

DR-153 (a), (b) ; T REEL, S REEL DRIVER

1

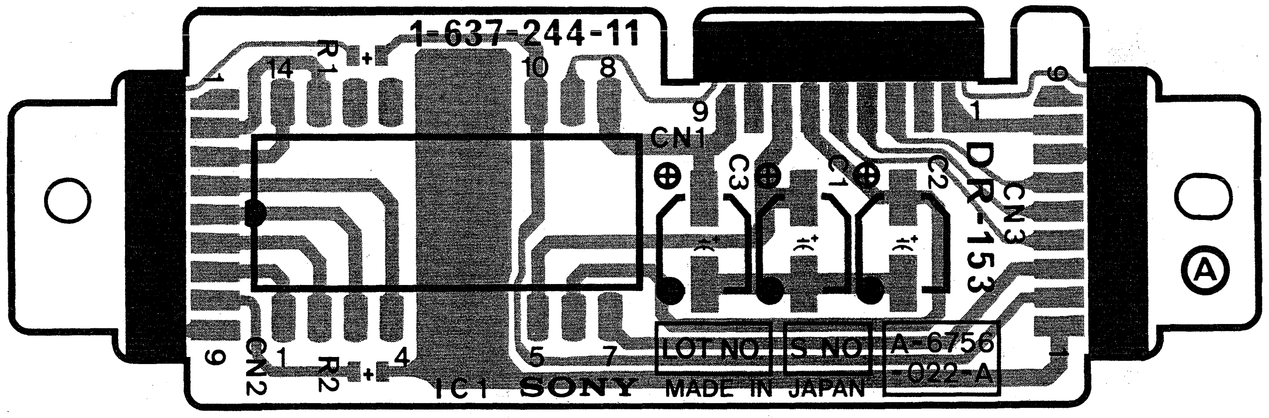

DR-153 (b)
SS (2/5), 123-1
SS (2/5), 123-2
SS (2/5), 123-3
SS (2/5), 123-4
SS (2/5), 123-5
SS (2/5), 123-6
SS (2/5), 123-7
SS (2/5), 123-8
SS (2/5), 123-9
S-REEL, 2-9
S-REEL, 2-8
S-REEL, 2-7
S-REEL, 2-6
S-REEL, 2-5
S-REEL, 2-4
S-REEL, 2-3
S-REEL, 2-2
S-REEL, 2-1
DR-153 (a)
SS (2/5), 124-1
SS (2/5), 124-2
SS (2/5), 124-3
SS (2/5), 124-4
SS (2/5), 124-5
SS (2/5), 124-6
SS (2/5), 124-7
SS (2/5), 124-8
SS (2/5), 124-9
T-REEL, 2-9
T-REEL, 2-8
T-REEL, 2-7
T-REEL, 2-6
T-REEL, 2-5
T-REEL, 2-4
T-REEL, 2-3
T-REEL, 2-2
T-REEL, 2-1
CN3
9
8 FG BIAS IN
7 FG 1 OUT
6 FG GND IN
5 FG 2 OUT
4 DIR (H:CW) IN
3 VS IN
2 VCC IN
1 GND (RET) OUT
CN2
1
2 Ha- IN
3 Ha+ IN
4 Hc- IN
5 Hc+ IN
6 Hb- IN
7 Hb+ IN
8 VH- OUT
9 VH+ OUT
R2 680
R1 680
IC1
TA7262P-LB
10 9 7 F F
13 14 4 3 2 1 12
5 6 8
C1 47 16V
C2 47 16V
C3 47 16V
CN1
FG Vcc OUT 1
FG1 IN 2
FG GND 3
FG2 IN 4
(DIR) 5
(Lb) 6
La 7
Lb 8
Lc 9
DR-153 (a)
T-REEL, 1-9
T-REEL, 1-8
T-REEL, 1-7
T-REEL, 1-6
T-REEL, 1-5
T-REEL, 1-4
T-REEL, 1-3
T-REEL, 1-2
T-REEL, 1-1
DR-153 (b)
S-REEL, 1-9
S-REEL, 1-8
S-REEL, 1-7
S-REEL, 1-6
S-REEL, 1-5
S-REEL, 1-4
S-REEL, 1-3
S-REEL, 1-2
S-REEL, 1-1

2

DR-153 (a), (b)
1-637-244-11 (1)
SVP-9020

3

4

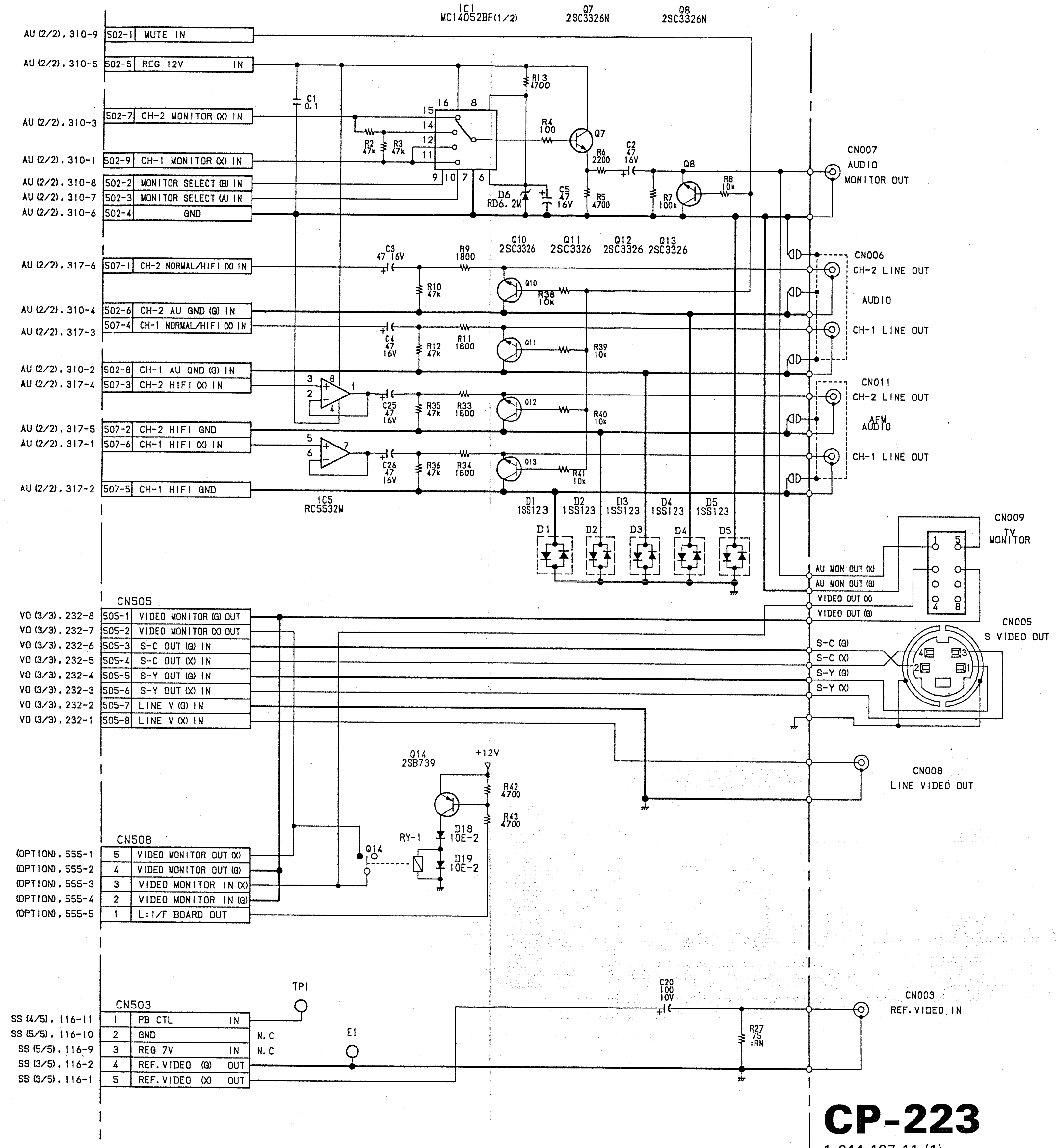

1-637-244-11
R1
14
10
8
1
9
CN1
C3
C1
C2
1
DR-153
CN3
9
A
9
CN2
1
R2
4
5
7
IC1
SONY
LOT NO
S NO
MADE IN JAPAN
A-6756
-022-A

DR-153 (a), (b) — A SIDE —
1-637-244-11 (1)
SVP-9020

5

A B C D E F G H

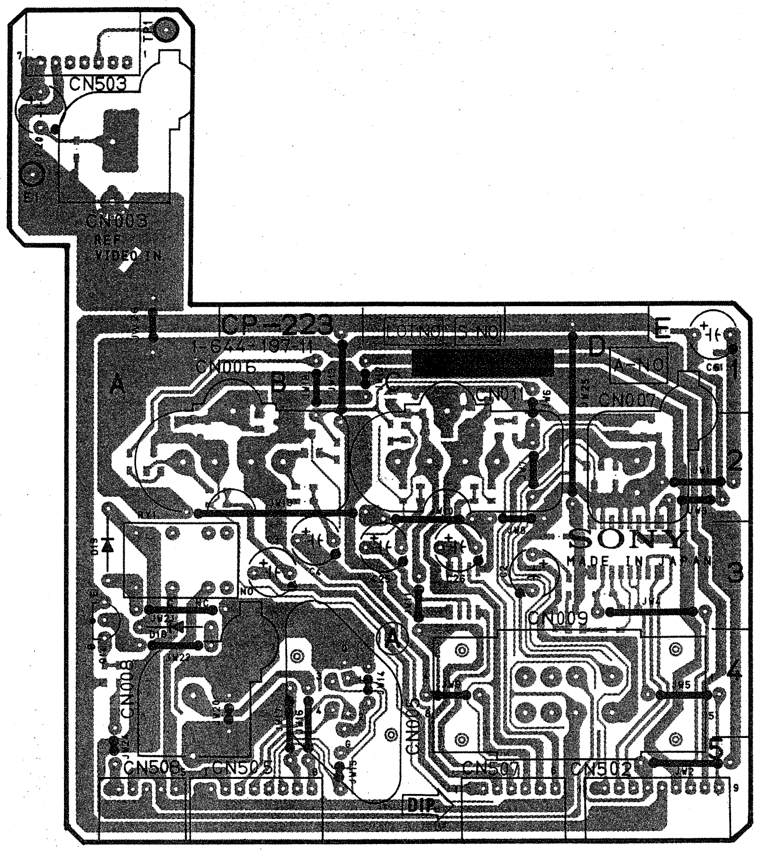
CP-223 : CONNECTION OF REAR CONNECTOR


IC1 MC14052BF(1/2)
Q7 2SC3326N
Q8 2SC3326N
AU (2/2), 310-9 502-1 MUTE IN
AU (2/2), 310-5 502-5 REG 12V IN
AU (2/2), 310-3 502-7 CH-2 MONITOR (X) IN
AU (2/2), 310-1 502-9 CH-1 MONITOR (X) IN
AU (2/2), 310-8 502-2 MONITOR SELECT (B) IN
AU (2/2), 310-7 502-3 MONITOR SELECT (A) IN
AU (2/2), 310-6 502-4 GND
C1 0.1
R13 4700
R4 100
R2 47k
R3 47k
R6 2200
C2 47 16V
R8 10k
R7 100k
R5 4700
C5 47 16V
D6 RD6.2M
CN007 AUDIO MONITOR OUT
Q10 2SC3326
Q11 2SC3326
Q12 2SC3326
Q13 2SC3326
AU (2/2), 317-6 507-1 CH-2 NORMAL/HIFI (X) IN
AU (2/2), 310-4 502-6 CH-2 AU GND (G) IN
AU (2/2), 317-3 507-4 CH-1 NORMAL/HIFI (X) IN
AU (2/2), 310-2 502-8 CH-1 AU GND (G) IN
AU (2/2), 317-4 507-3 CH-2 HIFI (X) IN
AU (2/2), 317-5 507-2 CH-2 HIFI GND
AU (2/2), 317-1 507-6 CH-1 HIFI (X) IN
AU (2/2), 317-2 507-5 CH-1 HIFI GND
C3 47 16V
R9 1800
R10 47k
R38 10k
C4 47 16V
R12 47k
R11 1800
R39 10k
C25 47 16V
R35 47k
R33 1800
R40 10k
C26 47 16V
R36 47k
R34 1800
R41 10k
IC5 RC5532M
CN006 CH-2 LINE OUT AUDIO CH-1 LINE OUT
CN011 CH-2 LINE OUT AFM AUDIO CH-1 LINE OUT
D1 1SS123
D2 1SS123
D3 1SS123
D4 1SS123
D5 1SS123
CN009 TV MONITOR
AU MON OUT (X)
AU MON OUT (G)
VIDEO OUT (X)
VIDEO OUT (G)
CN505
VO (3/3), 232-8 505-1 VIDEO MONITOR (G) OUT
VO (3/3), 232-7 505-2 VIDEO MONITOR (X) OUT
VO (3/3), 232-6 505-3 S-C OUT (G) IN
VO (3/3), 232-5 505-4 S-C OUT (X) IN
VO (3/3), 232-4 505-5 S-Y OUT (G) IN
VO (3/3), 232-3 505-6 S-Y OUT (X) IN
VO (3/3), 232-2 505-7 LINE V (G) IN
VO (3/3), 232-1 505-8 LINE V (X) IN
CN005 S VIDEO OUT
S-C (G)
S-C (X)
S-Y (G)
S-Y (X)
CN008 LINE VIDEO OUT
Q14 2SB739
+12V
R42 4700
R43 4700
RY-1
D18 10E-2
D19 10E-2
CN508
(OPTION), 555-1 5 VIDEO MONITOR OUT (X)
(OPTION), 555-2 4 VIDEO MONITOR OUT (G)
(OPTION), 555-3 3 VIDEO MONITOR IN (X)
(OPTION), 555-4 2 VIDEO MONITOR IN (G)
(OPTION), 555-5 1 L:I/F BOARD OUT
TP1
E1
C20 100 10V
R27 75 :RN
CN003 REF. VIDEO IN
CN503
SS (4/5), 116-11 1 PB CTL IN
SS (5/5), 116-10 2 GND N.C
SS (5/5), 116-9 3 REG 7V IN N.C
SS (3/5), 116-2 4 REF. VIDEO (G) OUT
SS (3/5), 116-1 5 REF. VIDEO (X) OUT

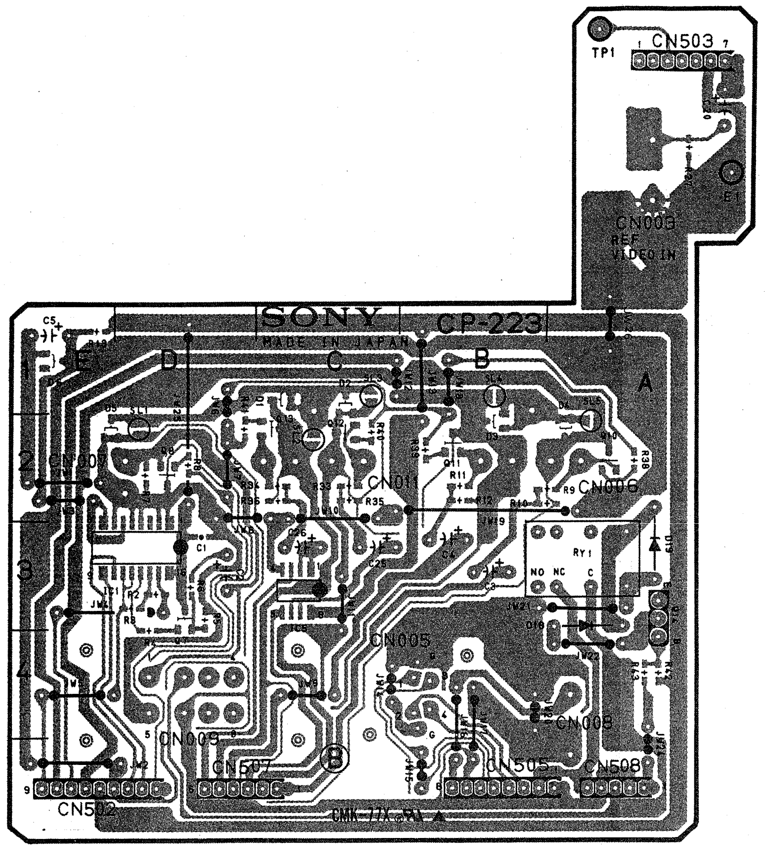
CP-223

1-644-197-11 (1)
SVP-9020

CP-223; CONNECTION OF REAR CONNECTOR


CN503
TP1
CN003
REF
VIDEO IN
CP-223
CN006
CN011
CN007
CN009
CN004
CN506
CN505
CN507
CN502
SONY
MADE IN JAPAN
A
B
D
E
1
2
3
4
5
DIP

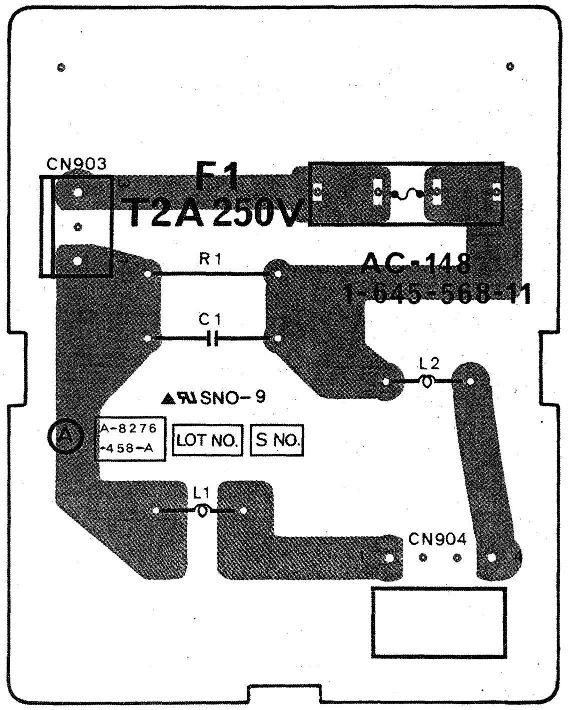
CP-223 — A SIDE —
1-644-197-11 (1)
SVP-9020


TP1
CN503
CN003
REF
VIDEO IN
SONY
MADE IN JAPAN
CP-223
A
B
C
D
E
1
2
3
4
CN011
CN006
CN005
CN009
CN507
CN505
CN508
CN502
RY1
NO
NC
C

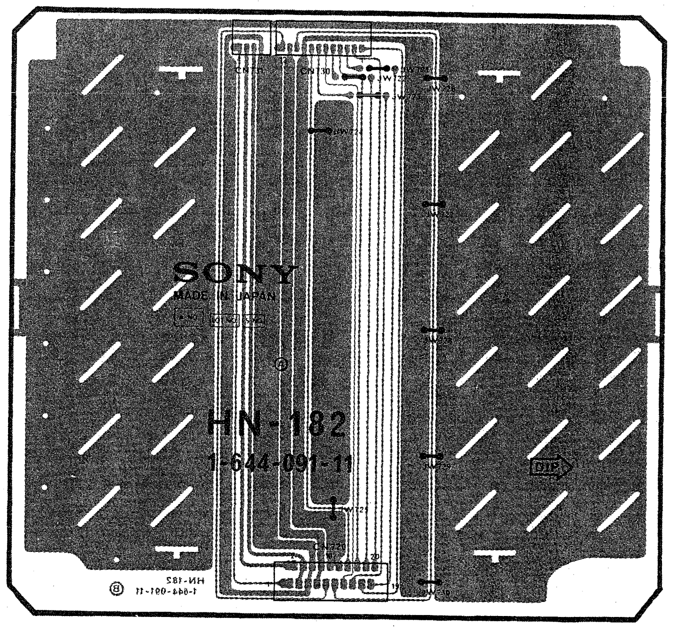
CP-223 — B SIDE —
1-644-197-11 (1)
SVP-9020

AC-148, CM-14, HN-182,
LD-35, SW-514C, SW-532A

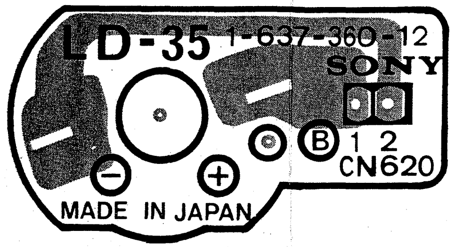
AC-148 ;	**AC INPUT**
CM-14 ;	**CASSETTE COMPARTMENT MOTOR**
HN-182 ;	**CONNECTION (SERVO)**
LD-35 ;	**LOADING MOTOR**
SW-514C ;	**SELECT SWITCH**
SW-532A ;	**TIMER REC/TIMER PLAY SWITCH**


CN903
F1
T2A 250V
R1
AC-148
1-645-568-11
C1
L2
SNO-9
Ⓐ
A-8276
-458-A
LOT NO.
S NO.
L1
CN904

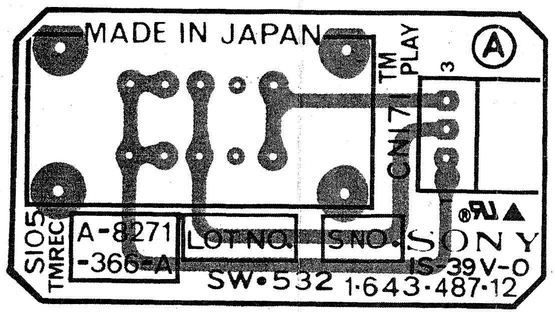
AC-148 – A SIDE –
1-645-568-11 (1)
SVP-9020


SONY
MADE IN JAPAN
HN-182
1-644-091-11
DIP

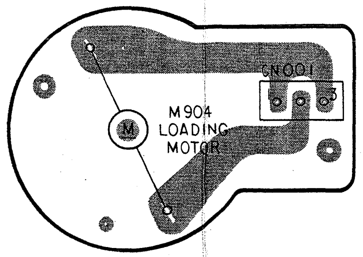
HN-182 – A SIDE –
1-644-091-11 (1)
SVP-9020


LD-35 1-637-360-12
SONY
Ⓑ 1 2
CN620
⊖
⊕
MADE IN JAPAN

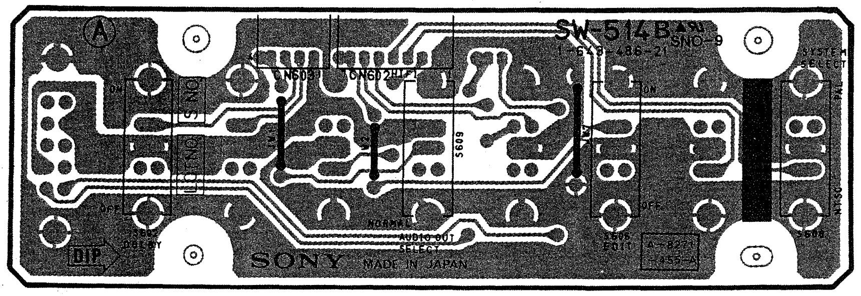
LD-35 – B SIDE –
1-637-360-12 (1)
SVP-9020


MADE IN JAPAN
TM PLAY
Ⓐ
3
CN171
S105
TMREC
A-8271
-366-A
LOT NO.
S NO.
SONY
SW-532 1-643-487-12
IS-39V-0

SW-532A – A SIDE –
1-643-487-12 (1)
SVP-9020


CN001
M904
LOADING
MOTOR
M

CM-14 – B SIDE –
1-630-505-21 (1)
SVP-9020

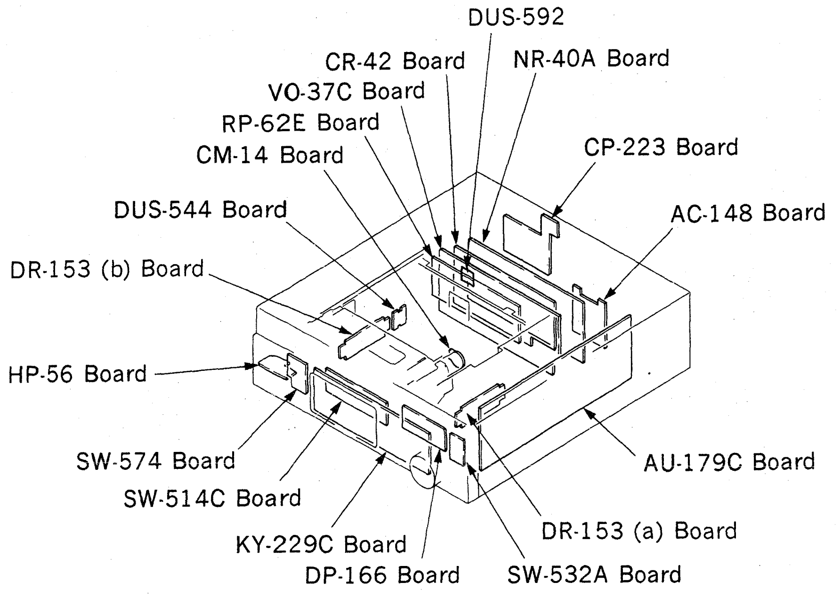

Ⓐ
SW-514B
SNO-9
DIP
SONY
MADE IN JAPAN

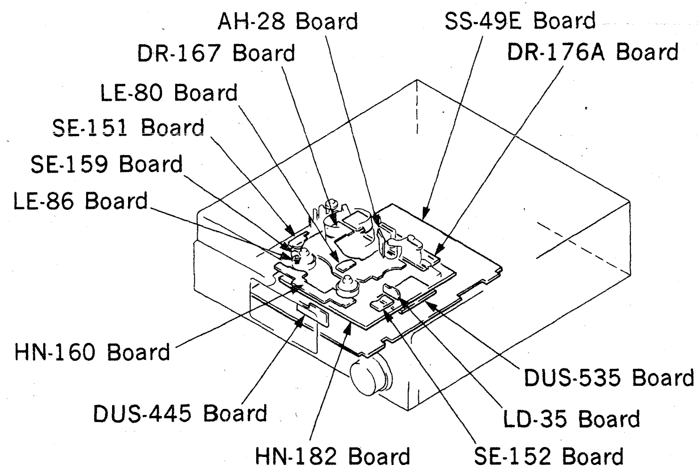
SW-514C – A SIDE –
1-643-486-21 (1)
SVP-9020

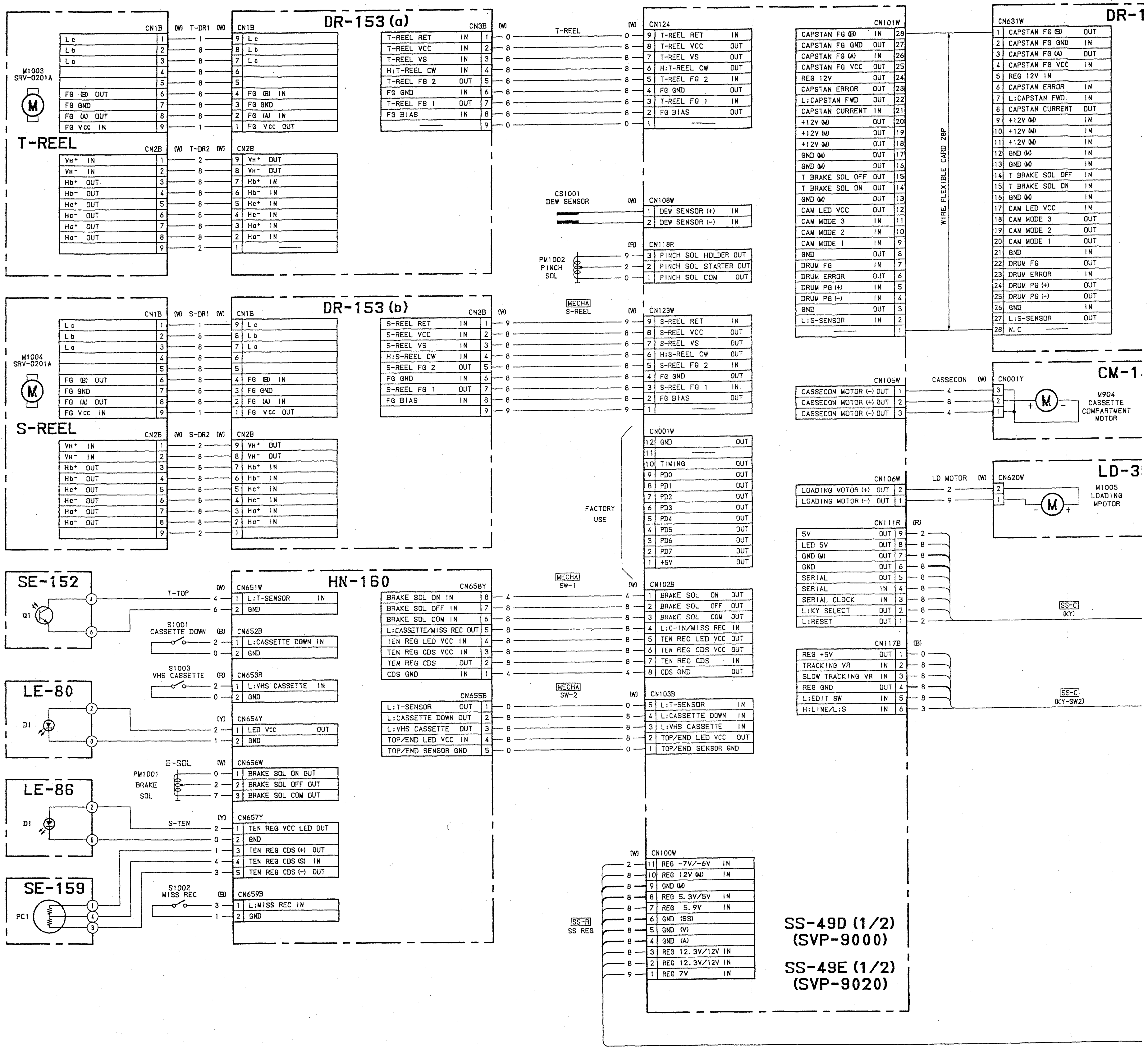
14-50

FRAME (1/2)

AC-148;	**AC INPUT**
CM-14;	**CASSETTE COMPARTMENT MOTOR**
HN-182;	**CONNECTION (SERVO)**
LD-35;	**LOADING MOTOR**
SW-514C;	**SELECT SWITCH**
SW-532A;	**TIMER REC/TIMER PLAY SWITCH**

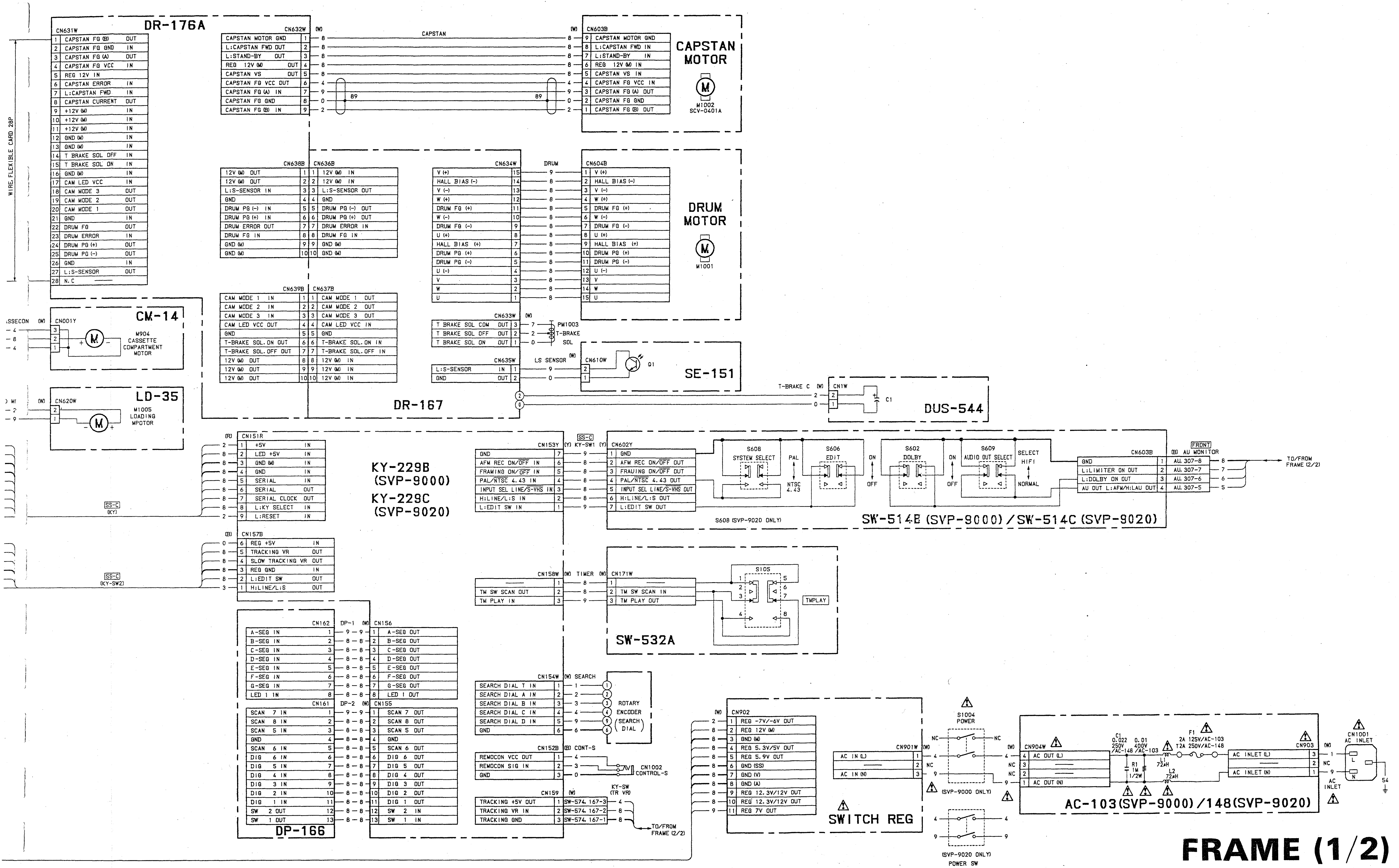

DUS-592
CR-42 Board
NR-40A Board
VO-37C Board
RP-62E Board
CM-14 Board
CP-223 Board
DUS-544 Board
AC-148 Board
DR-153 (b) Board
HP-56 Board
SW-574 Board
SW-514C Board
AU-179C Board
KY-229C Board
DR-153 (a) Board
DP-166 Board
SW-532A Board


AH-28 Board
SS-49E Board
DR-167 Board
DR-176A Board
LE-80 Board
SE-151 Board
SE-159 Board
LE-86 Board
HN-160 Board
DUS-535 Board
DUS-445 Board
LD-35 Board
HN-182 Board
SE-152 Board


T-REEL
M1003 SRV-0201A
DR-153 (a)
S-REEL
M1004 SRV-0201A
DR-153 (b)
SE-152
LE-80
LE-86
SE-159
HN-160
T-TOP
S1001 CASSETTE DOWN
S1003 VHS CASSETTE
B-SOL
PM1001 BRAKE SOL
S-TEN
S1002 MISS REC
T-REEL
CS1001 DEW SENSOR
PM1002 PINCH SOL
S-REEL
FACTORY USE
MECHA SW-1
MECHA SW-2
SS-R SS REG
CASSECON
LD MOTOR
WIRE, FLEXIBLE CARD 28P
DR-1
CM-1
M904 CASSETTE COMPARTMENT MOTOR
LD-3
M1005 LOADING MOTOR
SS-C (KY)
SS-C (KY-SW2)
SS-49D (1/2) (SVP-9000)
SS-49E (1/2) (SVP-9020)

NOTE:
The ⚠-marked components are critical to sefety.
Replace only with same components as specified.

FRAME (1/2), AC-148, CM-14, HN-182, LD-35, SW-514C, SW-532A


DR-176A
CN631W
1 CAPSTAN FG (B) OUT
2 CAPSTAN FG GND IN
3 CAPSTAN FG (A) OUT
4 CAPSTAN FG VCC IN
5 REG 12V IN
6 CAPSTAN ERROR IN
7 L:CAPSTAN FWD IN
8 CAPSTAN CURRENT OUT
9 +12V (M) IN
10 +12V (M) IN
11 +12V (M) IN
12 GND (M) IN
13 GND (M) IN
14 T BRAKE SOL OFF IN
15 T BRAKE SOL ON IN
16 GND (M) IN
17 CAM LED VCC IN
18 CAM MODE 3 OUT
19 CAM MODE 2 OUT
20 CAM MODE 1 OUT
21 GND IN
22 DRUM FG OUT
23 DRUM ERROR IN
24 DRUM PG (+) OUT
25 DRUM PG (–) OUT
26 GND IN
27 L:S-SENSOR OUT
28 N.C
WIRE FLEXIBLE CARD 28P
CN632W
CAPSTAN MOTOR GND
L:CAPSTAN FWD OUT
L:STAND-BY OUT
REG 12V (M) OUT
CAPSTAN VS OUT
CAPSTAN FG VCC OUT
CAPSTAN FG (A) IN
CAPSTAN FG GND
CAPSTAN FG (B) IN
CAPSTAN
CN603B
9 CAPSTAN MOTOR GND
8 L:CAPSTAN FWD IN
7 L:STAND-BY IN
6 REG 12V (M) IN
5 CAPSTAN VS IN
4 CAPSTAN FG VCC IN
3 CAPSTAN FG (A) OUT
2 CAPSTAN FG GND
1 CAPSTAN FG (B) OUT
CAPSTAN MOTOR
M1002
SCV-0401A
CN638B
12V (M) OUT
12V (M) OUT
L:S-SENSOR IN
GND
DRUM PG (–) IN
DRUM PG (+) IN
DRUM ERROR OUT
DRUM FG IN
GND (M)
GND (M)
CN636B
12V (M) IN
12V (M) IN
L:S-SENSOR OUT
GND
DRUM PG (–) OUT
DRUM PG (+) OUT
DRUM ERROR IN
DRUM FG IN
GND (M)
GND (M)
CN634W
V (+)
HALL BIAS (–)
V (–)
W (+)
DRUM FG (+)
W (–)
DRUM FG (–)
U (+)
HALL BIAS (+)
DRUM PG (+)
DRUM PG (–)
U (–)
V
W
U
DRUM
CN604B
1 V (+)
2 HALL BIAS (–)
3 V (–)
4 W (+)
5 DRUM FG (+)
6 W (–)
7 DRUM FG (–)
8 U (+)
9 HALL BIAS (+)
10 DRUM PG (+)
11 DRUM PG (–)
12 U (–)
13 V
14 W
15 U
DRUM MOTOR
M1001
CN639B
CN637B
CAM MODE 1 IN
CAM MODE 2 IN
CAM MODE 3 IN
CAM LED VCC OUT
GND
T-BRAKE SOL. ON OUT
T-BRAKE SOL. OFF OUT
12V (M) OUT
12V (M) OUT
12V (M) OUT
CAM MODE 1 OUT
CAM MODE 2 OUT
CAM MODE 3 OUT
CAM LED VCC IN
GND
T-BRAKE SOL. ON IN
T-BRAKE SOL. OFF IN
12V (M) IN
12V (M) IN
12V (M) IN
CN633W
T BRAKE SOL COM OUT
T BRAKE SOL OFF OUT
T BRAKE SOL ON OUT
PM1003
T-BRAKE SOL
CN635W
L:S-SENSOR IN
GND OUT
LS SENSOR
CN610W
Q1
SE-151
DR-167
T-BRAKE C
CN1W
C1
DUS-544
CM-14
CN001Y
M904
CASSETTE COMPARTMENT MOTOR
LD-35
CN620W
M1005
LOADING MOTOR
KY-229B (SVP-9000)
KY-229C (SVP-9020)
CN151R
1 +5V IN
2 LED +5V IN
3 GND (M) IN
4 GND IN
5 SERIAL IN
6 SERIAL OUT
7 SERIAL CLOCK OUT
8 L:KY SELECT IN
9 L:RESET IN
SS-C (KY)
CN157B
6 REG +5V IN
5 TRACKING VR OUT
4 SLOW TRACKING VR OUT
3 REG GND IN
2 L:EDIT SW OUT
1 H:LINE/L:S OUT
SS-C (KY-SW2)
CN153Y
GND
AFM REC ON/OFF IN
FRAMING ON/OFF IN
PAL/NTSC 4.43 IN
INPUT SEL LINE/S-VHS IN
H:LINE/L:S IN
L:EDIT SW IN
SS-C KY-SW1
CN602Y
1 GND
2 AFM REC ON/OFF OUT
3 FRAMING ON/OFF OUT
4 PAL/NTSC 4.43 OUT
5 INPUT SEL LINE/S-VHS OUT
6 H:LINE/L:S OUT
7 L:EDIT SW OUT
S608 SYSTEM SELECT
PAL
NTSC 4.43
S606 EDIT
ON OFF
S602 DOLBY
ON OFF
S609 AUDIO OUT SELECT
SELECT HIFI
NORMAL
S608 (SVP-9020 ONLY)
CN603B
GND
L:LIMITER ON OUT
L:DOLBY ON OUT
AU OUT L:AFM/H:LAU OUT
FRONT AU MONITOR
AU. 307-8
AU. 307-7
AU. 307-6
AU. 307-5
TO/FROM FRAME (2/2)
SW-514B (SVP-9000) / SW-514C (SVP-9020)
CN158W
TM SW SCAN OUT
TM PLAY IN
TIMER
CN171W
TM SW SCAN IN
TM PLAY OUT
S105
TMPLAY
SW-532A
CN162
DP-1
CN156
A-SEG IN / A-SEG OUT
B-SEG IN / B-SEG OUT
C-SEG IN / C-SEG OUT
D-SEG IN / D-SEG OUT
E-SEG IN / E-SEG OUT
F-SEG IN / F-SEG OUT
G-SEG IN / G-SEG OUT
LED 1 IN / LED 1 OUT
CN161
DP-2
CN155
SCAN 7 IN / SCAN 7 OUT
SCAN 8 IN / SCAN 8 OUT
SCAN 5 IN / SCAN 5 OUT
GND
SCAN 6 IN / SCAN 6 OUT
DIG 6 IN / DIG 6 OUT
DIG 5 IN / DIG 5 OUT
DIG 4 IN / DIG 4 OUT
DIG 3 IN / DIG 3 OUT
DIG 2 IN / DIG 2 OUT
DIG 1 IN / DIG 1 OUT
SW 2 OUT / SW 2 IN
SW 1 OUT / SW 1 IN
DP-166
CN154W
SEARCH DIAL T IN
SEARCH DIAL A IN
SEARCH DIAL B IN
SEARCH DIAL C IN
SEARCH DIAL D IN
GND
SEARCH
ROTARY ENCODER (SEARCH DIAL)
CN152B
REMOCON VCC OUT
REMOCON SIG IN
GND
CONT-S
CN1002 CONTROL-S
CN159
TRACKING +5V OUT
TRACKING VR IN
TRACKING GND
KY-SW (TR VR)
SW-574. 167-3
SW-574. 167-2
SW-574. 167-1
TO/FROM FRAME (2/2)
CN902
1 REG -7V/-6V OUT
2 REG 12V (M)
3 GND (M)
4 REG 5.3V/5V OUT
5 REG 5.9V OUT
6 GND (SS)
7 GND (V)
8 GND (A)
9 REG 12.3V/12V OUT
10 REG 12.3V/12V OUT
11 REG 7V OUT
SWITCH REG
CN901W
AC IN (L)
AC IN (N)
S1004 POWER
(SVP-9000 ONLY)
(SVP-9020 ONLY) POWER SW
CN904W
AC OUT (L)
AC OUT (N)
C1 0.022 250V /AC-148
0.01 400V /AC-103
R1 1M 1/2W
L1 72μH
L2 72μH
F1 2A 125V/AC-103 T2A 250V/AC-148
CN903
AC INLET (L)
AC INLET (N)
AC-103(SVP-9000)/148(SVP-9020)
CN1001 AC INLET
54

FRAME (1/2)

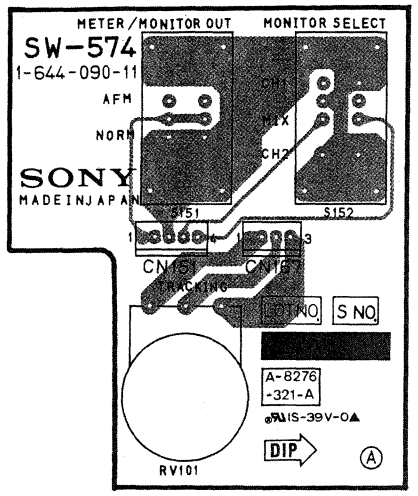
SVP-9000 (J)
SVP-9000 (UC)
SVP-9020 (EK)

FRAME (2/2), AH-28, HP-56, SW-574

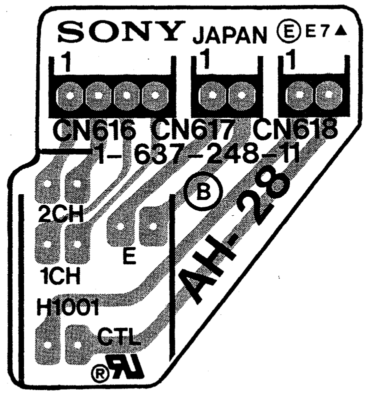
14-52

FRAME (2/2), AH-28, HP-56, SW-574

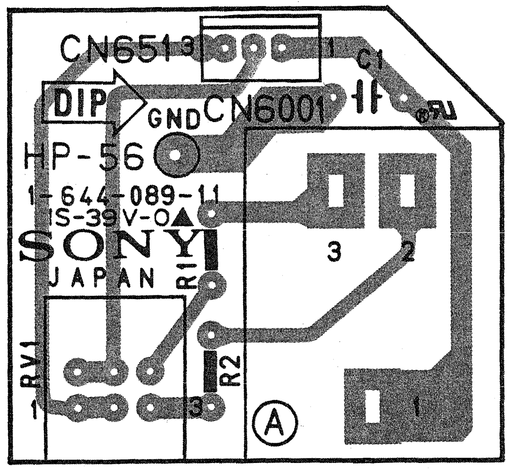
AH-28 ; AUDIO/CTL HEAD
HP-56 ; HEADPHONES CONNECTOR
SW-574 ; AUDIO SIGNAL SELECTOR


METER/MONITOR OUT
MONITOR SELECT
SW-574
1-644-090-11
AFM
NORM
CH1
MIX
CH2
SONY
MADE IN JAPAN
S151
S152
CN151
CN152
TRACKING
LOT NO
S NO
A-8276
-321-A
IS-39V-0▲
DIP
Ⓐ
RV101

SW-574 — A SIDE —
1-644-090-11 (1)
SVP-9020


SONY JAPAN Ⓔ E7▲
1
1
1
CN616
CN617
CN618
1-637-248-11
Ⓑ
AH-28
2CH
E
1CH
H1001
CTL

AH-28 — B SIDE —
1-637-248-11 (1)
SVP-9020

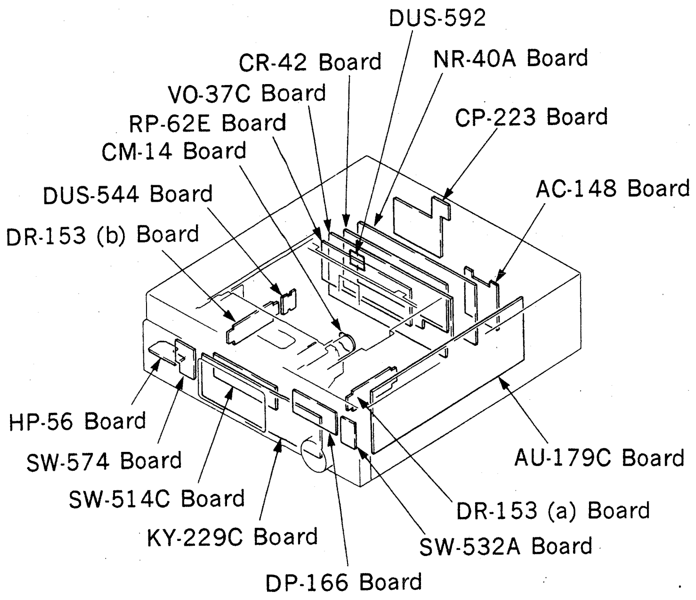

CN651
3
1
C1
DIP
GND
CN6001
HP-56
1-644-089-11
IS-39V-0▲
SONY
JAPAN
R1
RV1
R2
1
3
3
2
1
Ⓐ

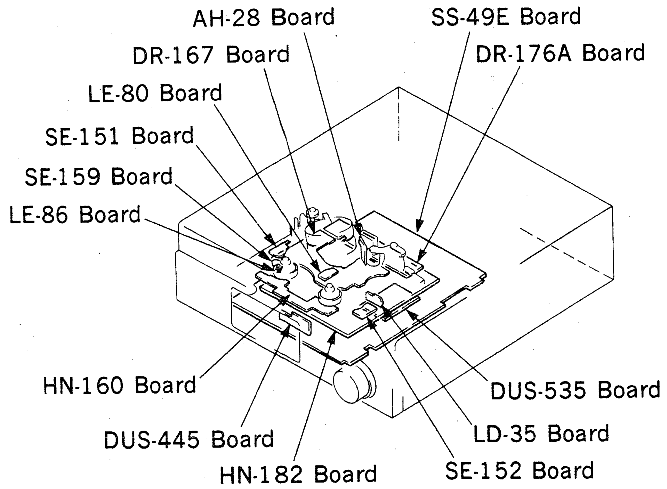
HP-56 — A SIDE —
1-644-089-11 (1)
SVP-9020

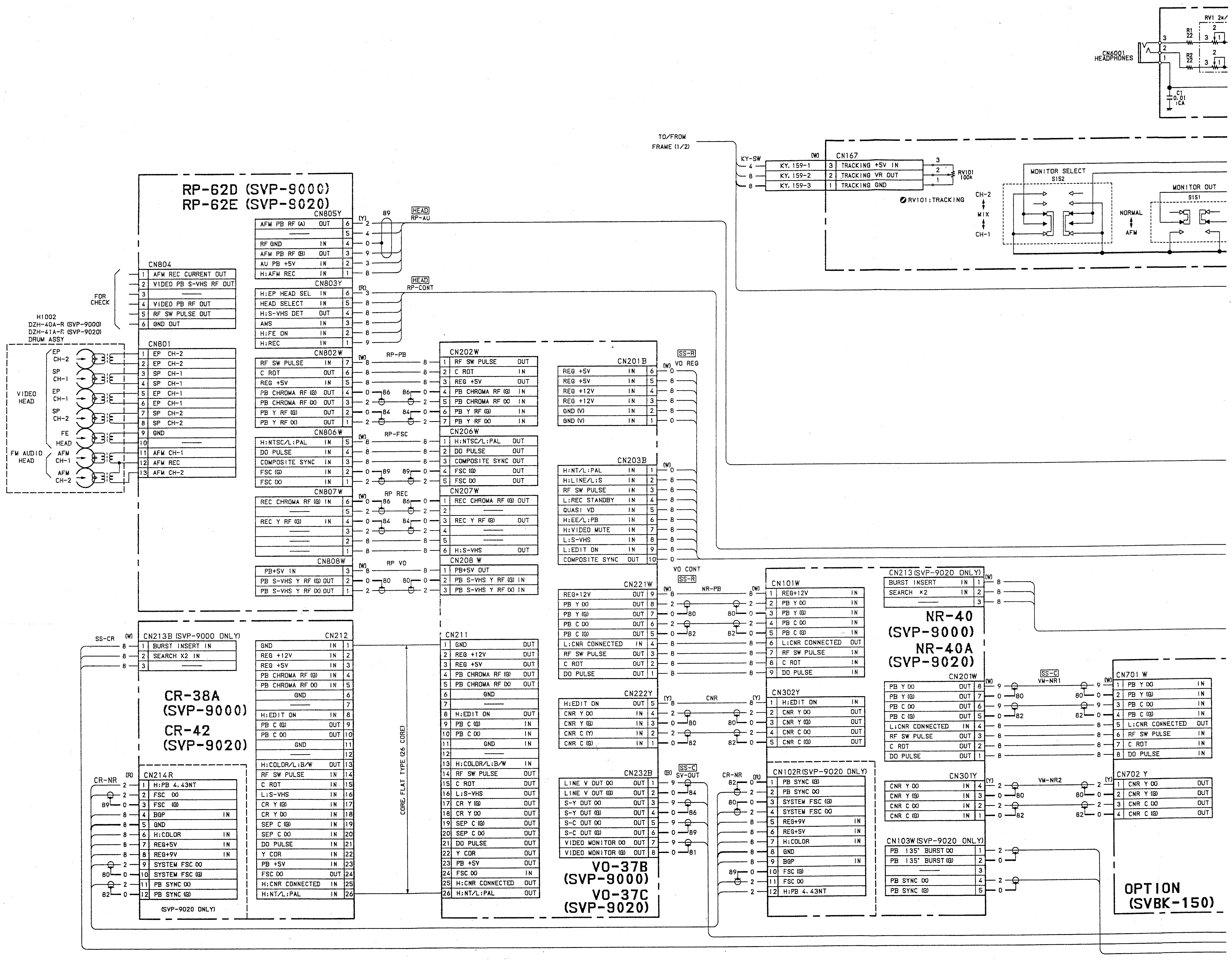
14-52

FRAME (2/2), AH-28, HP-56, SW-574

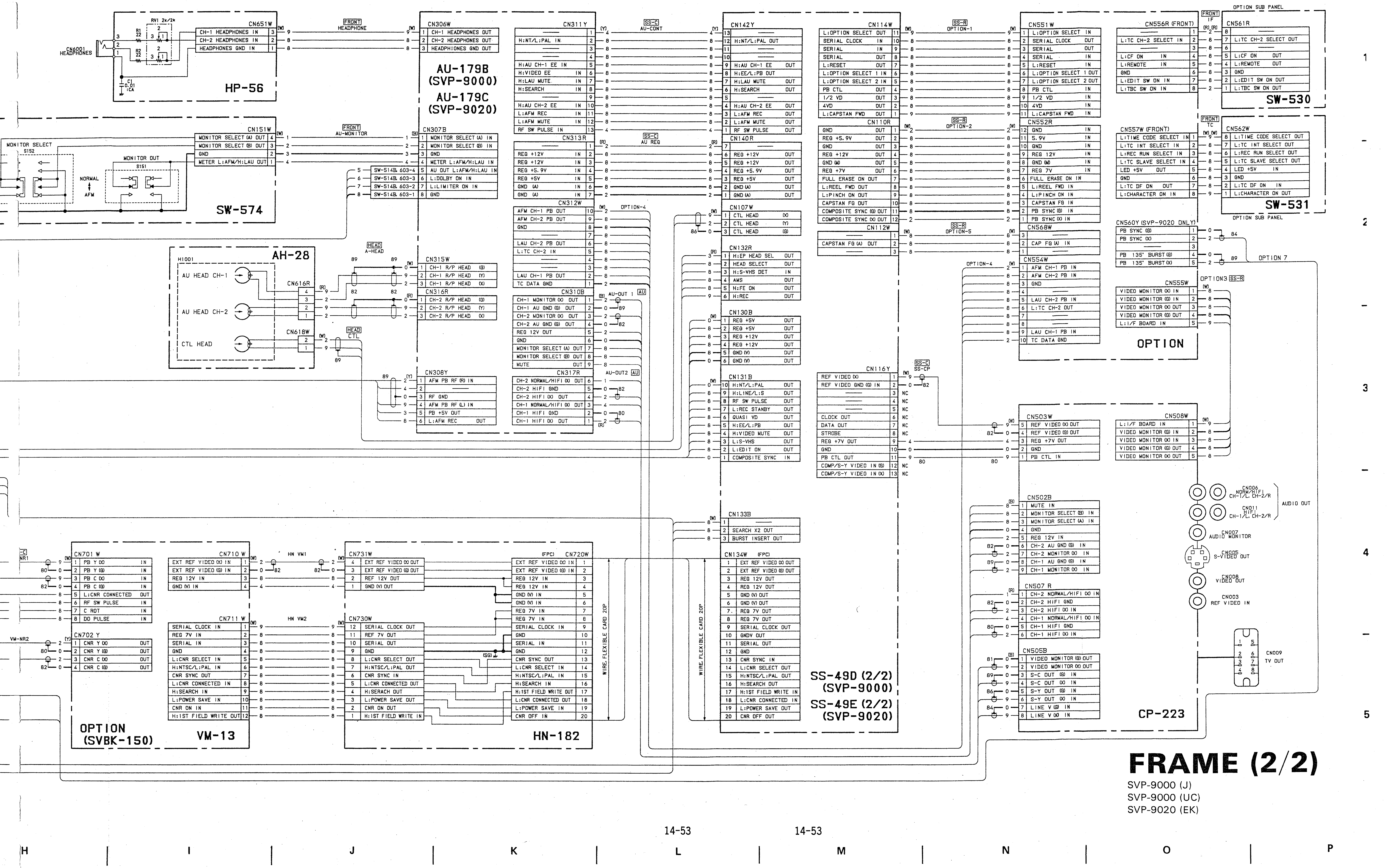
FRAME (2/2)


DUS-592
CR-42 Board
NR-40A Board
VO-37C Board
RP-62E Board
CP-223 Board
CM-14 Board
DUS-544 Board
AC-148 Board
DR-153 (b) Board
HP-56 Board
SW-574 Board
AU-179C Board
SW-514C Board
DR-153 (a) Board
KY-229C Board
SW-532A Board
DP-166 Board


AH-28 Board
SS-49E Board
DR-167 Board
DR-176A Board
LE-80 Board
SE-151 Board
SE-159 Board
LE-86 Board
HN-160 Board
DUS-535 Board
DUS-445 Board
LD-35 Board
HN-182 Board
SE-152 Board


RP-62D (SVP-9000)
RP-62E (SVP-9020)
CN805Y
CN803Y
CN804
CN801
CN802W
CN806W
CN807W
CN808W
H1002
DZH-40A-R (SVP-9000)
DZH-41A-R (SVP-9020)
DRUM ASSY
VIDEO HEAD
FM AUDIO HEAD
FE HEAD
FOR CHECK
HEAD RP-AU
HEAD RP-CONT
RP-PB
RP-FSC
RP REC
RP VO
CN202W
CN206W
CN207W
CN208W
CN201B
CN203B
SS-R VO REG
VO CONT
TO/FROM FRAME (1/2)
KY-SW
CN167
KY.159-1
KY.159-2
KY.159-3
TRACKING +5V IN
TRACKING VR OUT
TRACKING GND
RV101 100k
RV101:TRACKING
CH-2
MIX
CH-1
MONITOR SELECT
S152
NORMAL
AFM
MONITOR OUT
S151
CN6001 HEADPHONES
SS-CR
CN213B (SVP-9000 ONLY)
CN212
CR-38A (SVP-9000)
CR-42 (SVP-9020)
CR-NR
CN214R
(SVP-9020 ONLY)
CORE, FLAT TYPE (26 CORE)
CN211
CN221W
NR-PB
CN101W
CN222Y
CNR
CN302Y
CN232B
SS-C SV-OUT
CN102R (SVP-9020 ONLY)
VO-37B (SVP-9000)
VO-37C (SVP-9020)
CN213 (SVP-9020 ONLY)
NR-40 (SVP-9000)
NR-40A (SVP-9020)
CN201W
SS-C VM-NR1
CN701W
CN301Y
VM-NR2
CN702Y
CN103W (SVP-9020 ONLY)
OPTION (SVBK-150)

FRAME (2/2), AH-28, HP-56, SW-574


HP-56
SW-574
AH-28
AU-179B (SVP-9000)
AU-179C (SVP-9020)
SS-49D (2/2) (SVP-9000)
SS-49E (2/2) (SVP-9020)
SW-530
SW-531
OPTION
CP-223
OPTION (SVBK-150)
VM-13
HN-182
CN6001 HEADPHONES
MONITOR SELECT S152
MONITOR OUT S151
NORMAL AFM
AU HEAD CH-1
AU HEAD CH-2
CTL HEAD
OPTION SUB PANEL
AUDIO OUT
S-VIDEO OUT
VIDEO OUT
REF VIDEO IN
TV OUT
WIRE FLEXIBLE CARD 20P
1
2
3
4
5
H
I
J
K
L
M
N
O
P

FRAME (2/2)

SVP-9000 (J)
SVP-9000 (UC)
SVP-9020 (EK)

14-53

SECTION 15
SPARE PARTS AND FIXTURES

15-1. PARTS INFORMATION

(1) Safety Related Components Warning

Components marked with ⚠ on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear in this manual or in service bulletin and service manual supplements published by Sony.

(2) Standardization of Parts

Spare parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts".
This manual's exploded views and electrical parts list are indicating the part numbers of "the standardized genuine parts at present".

(3) Stock of Parts

Parts marked with "o" SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors

The following units may be assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF
Inductors : μH
Resistors : Ω

15-2. EXPLODED VIEWS

- Exploded views are composed of the following blocks.

Page

(1) Ornamental panel block 15-3
  Top plate
  Front panel
  Key panel

(2) Key Panel chassis block 15-4

(3) Rear Panel block 15-5
  Switching Regulator

(4) Printed circuit boards 15-6

(5) Cassette compartment block 15-7

(6) Drum ass'y and tape run blocks 15-8
  Drum ass'y
  Cleaning roller
  Tape guides
  Stationary heads
  Slide rails

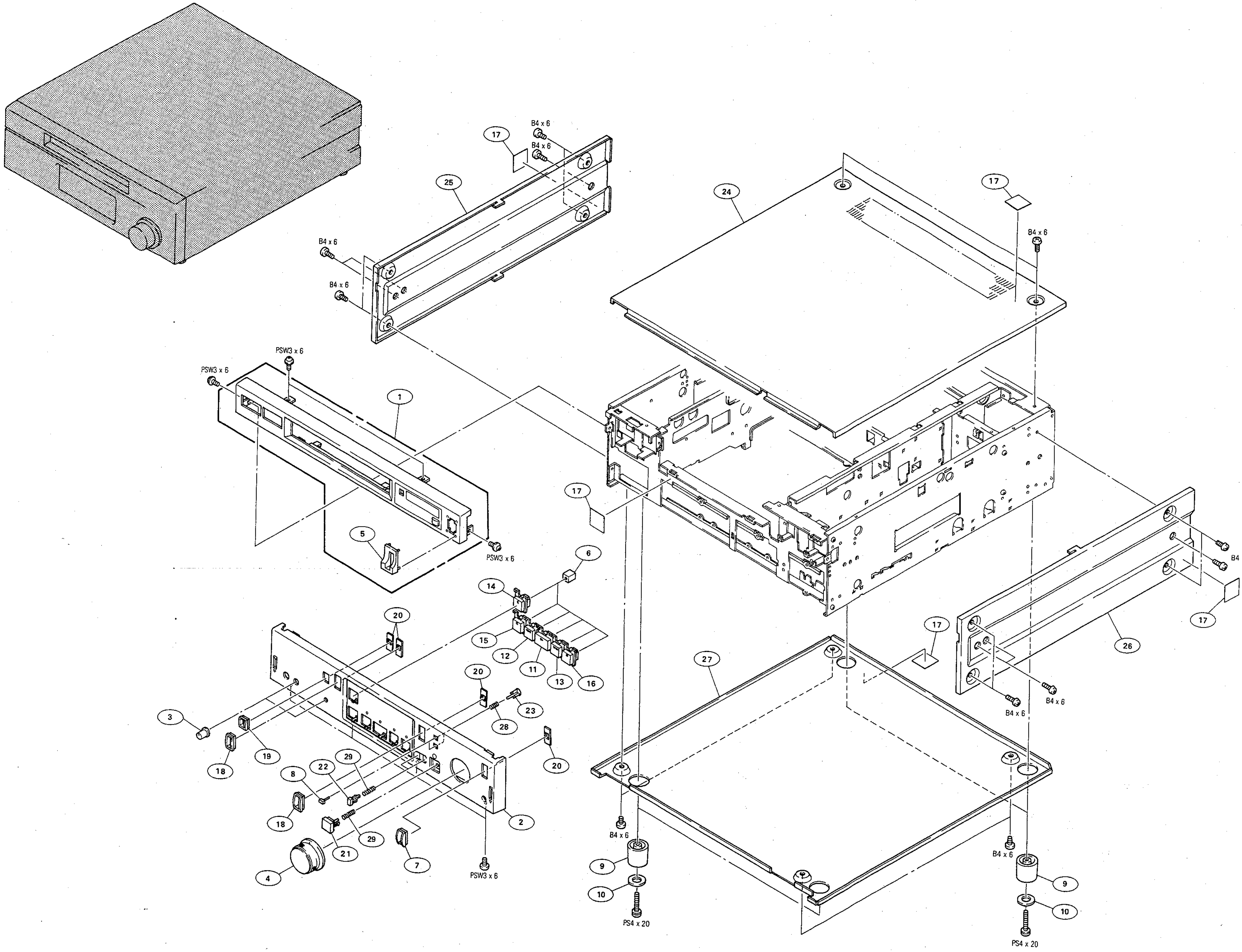
(7) Reel table and pinch roller blocks 15-9
  S/T reel table
  Pinch roller block
  Tension regulator arm
  RVS tape guide

Page

(8) Mechanism control block 15-10
  Reel motor
  Capstan motor
  Cam motor block
  S/T brake arm
  Threading gear assembly

ORNAMENTAL PANEL BLOCK

Ornamental panel block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B4 x 6
B4 x 6
25
24
17
B4 x 6
B4 x 6
B4 x 6
PSW3 x 6
PSW3 x 6
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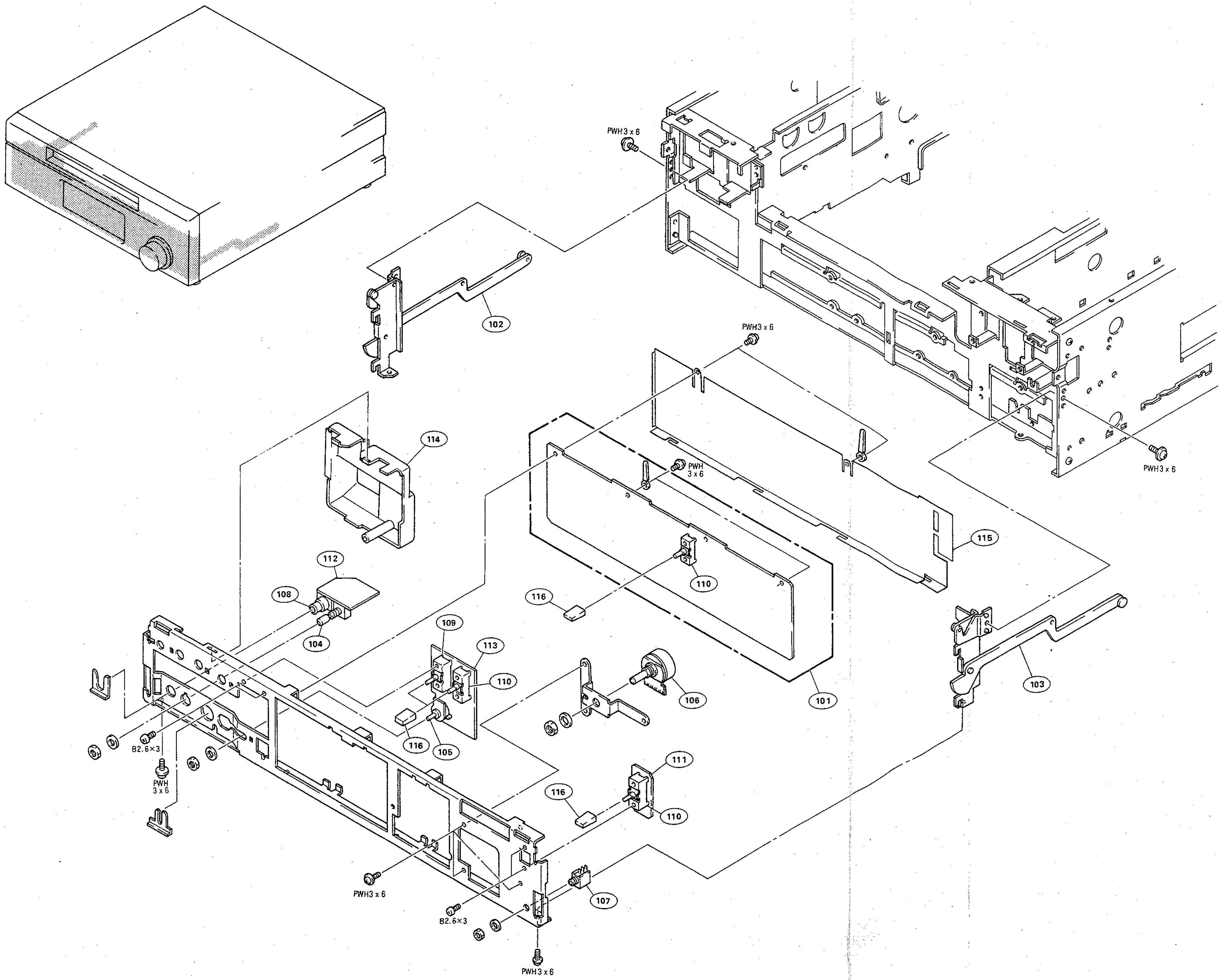
17
6
14
15
12
11
13
16
20
20
23
28
3
19
18
8
22
29
18
21
29
4
7
20
2
PSW3 x 6
27
17
26
17
B4 x 6
B4 x 6
B4 x 6
B4 x 6
B4 x 6
9
10
PS4 x 20
9
10
PS4 x 20

No.	Part No.	SP	Description
1	X-3166-765-1	o	PANEL ASSY, FRONT
2	X-3166-733-2	o	PANEL ASSY, KEY
3	X-3668-075-0	s	KNOB ASSY, CONTROL
4	X-3718-304-1	s	KNOB ASSY, DIAL
5	2-251-642-00	o	GUARD, POWER SWITCH
6	2-284-744-00	o	CUSHION (B), KEY
7	3-176-122-01	o	FRAME, LEVER SW
8	3-668-008-11	s	PUSH BUTTON (3x5)
9	3-668-844-01	s	LEG
10	3-668-845-01	o	CUSHION, LEG
11	3-672-782-02	s	KEY TOP (A), PLAY
12	3-672-783-02	s	KEY TOP (B), REW
13	3-672-783-12	s	KEY TOP (B), FF
14	3-672-783-32	s	KEY TOP (B), EJECT
15	3-672-783-42	s	KEY TOP (B), STOP
16	3-672-783-52	s	KEY TOP (B), PAUSE
17	3-703-079-21	o	LABEL (BACK), SUB CAUTION
18	3-717-374-01	o	FRAME (23x12), SWITCH
19	3-717-375-01	o	FRAME (18x12), SWITCH
20	3-717-613-01	o	PLATE, SWITCH BLIND
21	3-733-602-01	s	KEY TOP, SEARCH
22	3-733-606-01	s	PUSH BUTTON (5x9), ITEM/DATA
23	3-738-912-01	s	PIN (9), PUSH BUTTON
24	3-738-924-02	o	PLATE, TOP
25	3-738-925-03	o	PLATE (LEFT), SIDE
26	3-738-926-03	o	PLATE (RIGHT), SIDE
27	3-947-146-13	o	PLATE, BOTTOM
28	4-309-349-00	s	SPRING, COIL
29	4-866-613-00	s	SPRING, COIL

15-3

Key panel chassis block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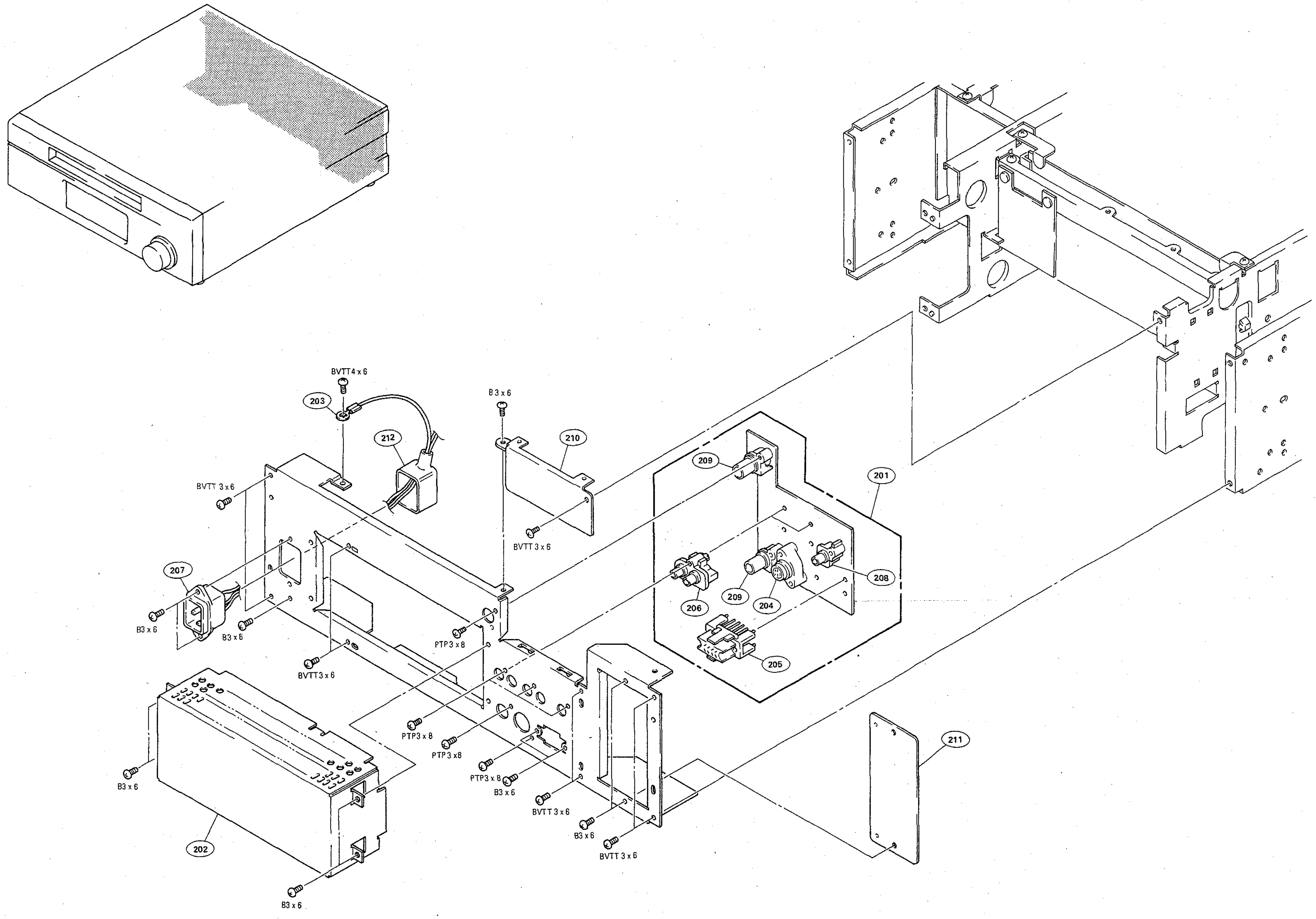
102
PWH3 x 6
114
PWH 3 x 6
115
PWH3 x 6
112
108
110
116
104
109
113
110
106
101
103
B2.6×3
PWH 3 x 6
116
105
111
116
110
PWH3 x 6
107
B2.6×3
PWH3 x 6

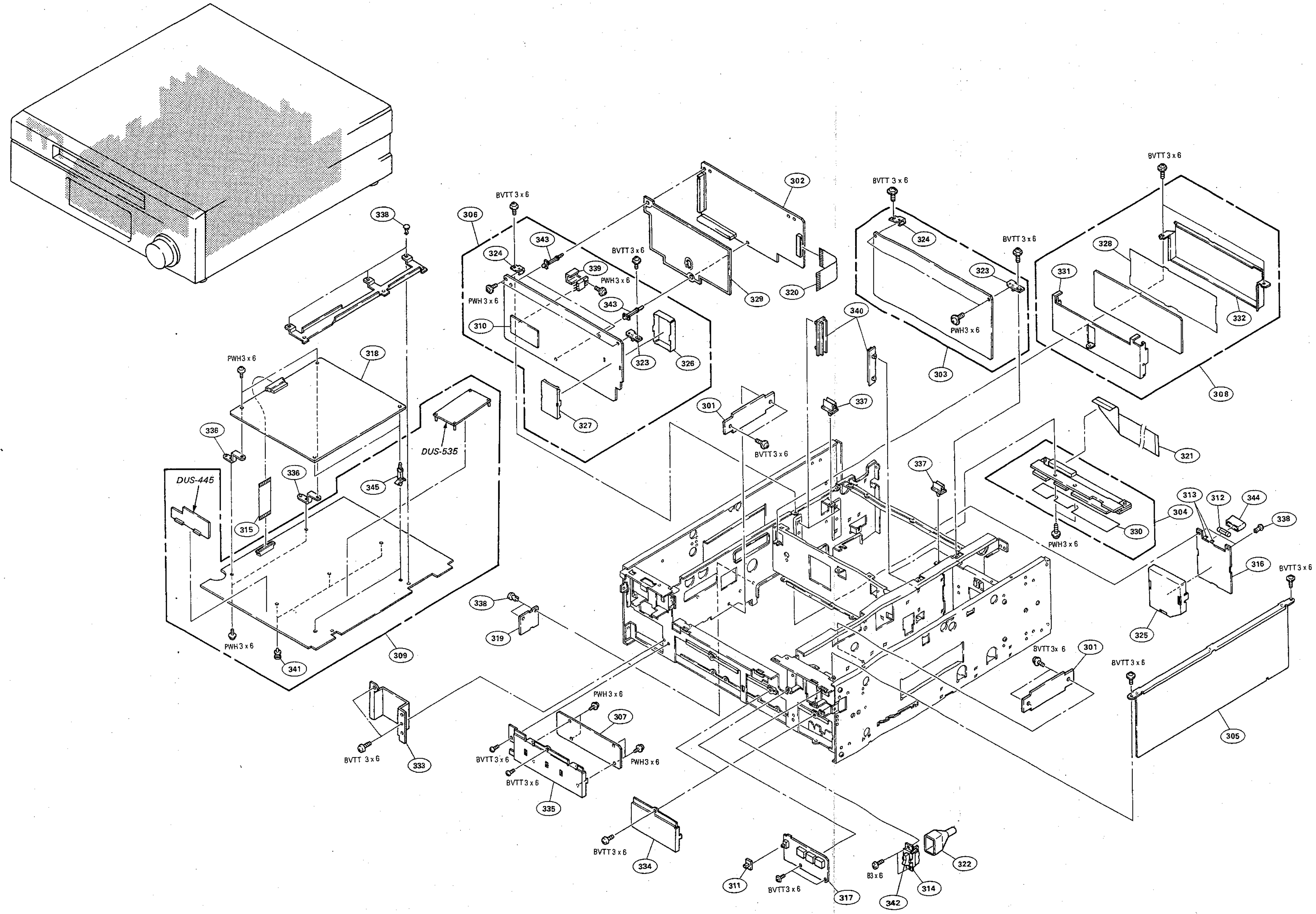
No.	Part No.	SP	Description
101	A-8271-523-A	o	MOUNTED CIRCUIT BOARD, KY-229C
102	X-3738-903-1	o	HINGI (LEFT) ASSY
103	X-3738-904-1	o	HINGI (RIGHT) ASSY
104	1-237-703-11	s	VAR RES, CARBON 2k/2kΩ (WITH WASHER AND NUT)
105	1-237-713-11	s	VAR RES, CARBON 100kΩ
106	1-464-801-12	s	ENCODER, ROTARY (WITH WASHER AND NUT)
107	1-507-743-21	s	JACK, MINIATURE (WITH WASHER AND NUT)
108	1-507-854-00	s	JACK, LARGE TYPE (WITH ATTACH PLATE (A))
109	1-516-961-00	s	SWITCH, LEVER SLIDE (2-2-2)
110	1-516-995-00	s	SWITCH, LEVER SLIDE (2-2-3)
111	1-643-487-12	o	PRINTED CIRCUIT BOARD, SW-532
112	1-644-089-11	o	PRINTED CIRCUIT BOARD, HP-56
113	1-644-090-11	o	PRINTED CIRCUIT BOARD, SW-574
114	3-176-127-01	o	PROTECTOR, P.C.B
115	3-176-133-02	o	SHIELD PLATE, P.C.B KY-229
116	3-717-382-01	s	KNOB, LEVER SW

Rear panel block


BVTT4 x 6
203
212
B3 x 6
210
BVTT 3 x 6
BVTT 3 x 6
209
201
207
B3 x 6
B3 x 6
PTP3 x 8
BVTT3 x 6
206
209
204
208
205
B3 x 6
PTP3 x 8
PTP3 x8
PTP3 x 8
B3 x 6
BVTT 3 x 6
B3 x 6
BVTT 3 x 6
211
202
B3 x 6

No.	Part No.	SP	Description
201	A-8271-457-A	o	MOUNTED CIRCUIT BOARD, CP-223
202	⚠1-413-730-11	s	SWITCHING REGULATOR ZSSP067HA
203	1-535-316-11	o	TERMINAL, GROUND (M4)
204	1-573-590-12	s	CONNECTOR, TERMINAL 4P (S-VIDEO)
205	1-573-602-11	s	CONNECTOR, TERMINAL 8P (TV OUT)
206	1-573-744-11	s	JACK, PIN 2P
207	⚠1-580-375-11	s	INLET 3P
208	1-691-273-11	s	JACK, PIN 1P
209	1-691-274-11	s	CONNECTOR, BNC 1P
210	3-168-049-01	o	PANEL, BLANK
211	3-176-115-01	o	COVER, REAR PANEL
212	4-605-946-01	o	COVER, 3P INLET

Printed circuit boards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BVTT 3 x 6
BVTT 3 x 6
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BVTT 3 x 6
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PWH 3 x 6
PWH 3 x 6
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BVTT 3 x 6
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332
PWH 3 x 6
303
340
308
PWH 3 x 6
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DUS-535
336
345
DUS-445
315
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PWH 3 x 6
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BVTT 3 x 6
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PWH 3 x 6
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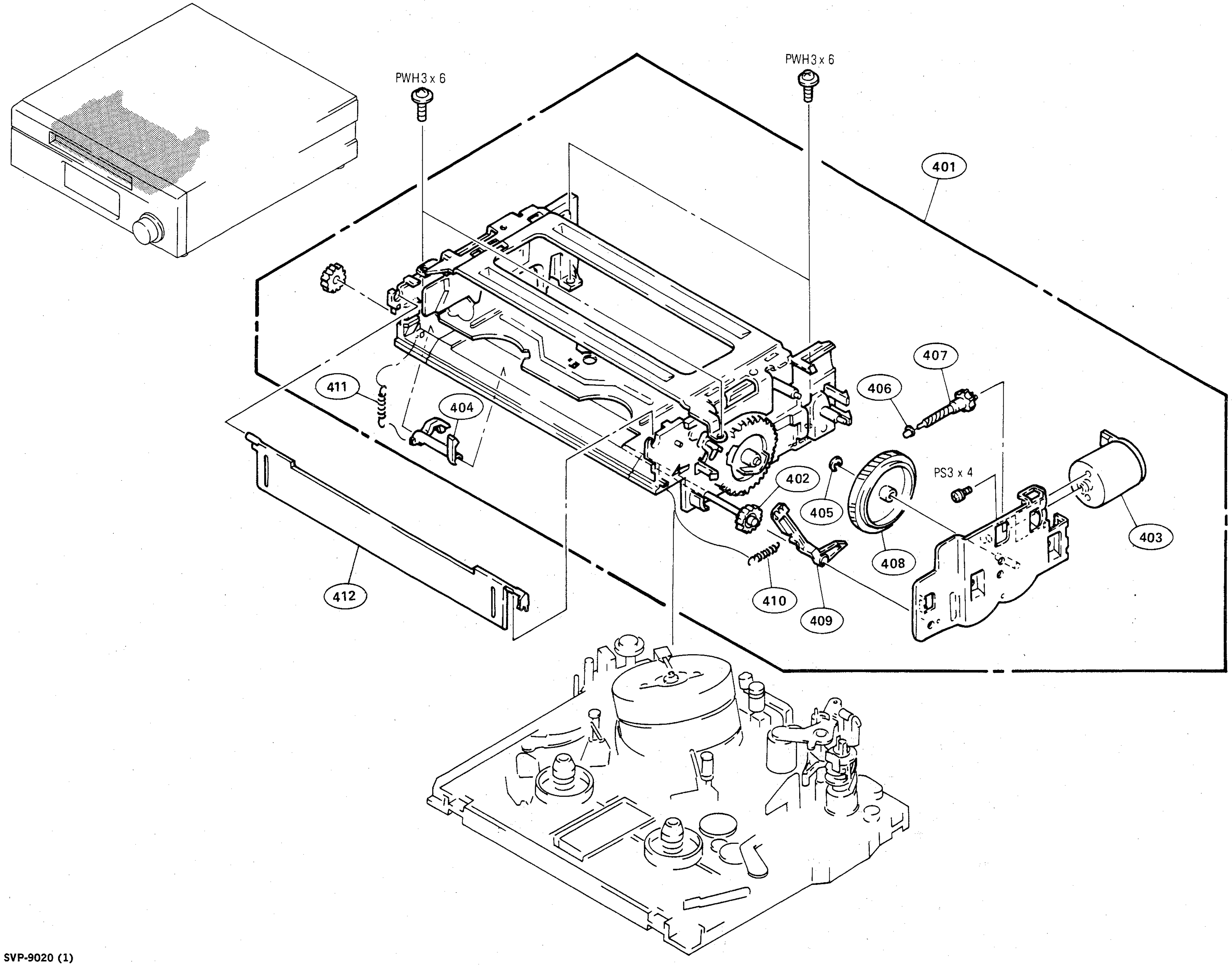
BVTT 3 x 6
325
338
319
BVTT 3 x 6
301
BVTT 3 x 6
305
333
BVTT 3 x 6
PWH 3 x 6
307
BVTT 3 x 6
PWH 3 x 6
BVTT 3 x 6
335
334
BVTT 3 x 6
311
BVTT 3 x 6
317
B3 x 6
342
314
322

No.	Part No.	SP	Description
301	A-6756-022-A	o	MOUNTED CIRCUIT BOARD, DR-153
302	A-8271-528-A	o	MOUNTED CIRCUIT BOARD, CR-42
303	A-8271-530-A	o	MOUNTED CIRCUIT BOARD, NR-40A
304	A-8271-369-A	o	MOUNTED CIRCUIT BOARD, DR-176A
305	A-8271-521-A	o	MOUNTED CIRCUIT BOARD, AU-179C
306	A-8271-522-A	o	MOUNTED CIRCUIT BOARD, VO-37C
307	A-8276-367-A	o	MOUNTED CIRCUIT BOARD, SW-514C
308	A-8271-525-A	o	MOUNTED CIRCUIT BOARD, RP-62E
309	A-8271-524-A	o	MOUNTED CIRCUIT BOARD, SS-49E
310	A-8276-478-A	o	MOUNTED CIRCUIT BOARD, DUS-592
311	X-3719-114-1	s	KNOB ASSY (2 POSI)
312	⚠1-532-203-00	s	FUSE, GLASS TUBE 2A 250V
313	1-533-189-11	s	HOLDER, FUSE
314	⚠1-570-117-41	s	SWITCH, AC POWER
315	1-590-308-11	s	WIRE, FLEXIBLE (20P)
316	1-645-568-11	o	PRINTED CIRCUIT BOARD, AC-148
317	1-643-491-11	o	PRINTED CIRCUIT BOARD, DP-166
318	1-644-091-11	o	PRINTED CIRCUIT BOARD, HN-182
319	1-644-095-12	o	PRINTED CIRCUIT BOARD, DUS-544
320	1-690-613-11	o	WIRE, FLEXIBLE (26P)
321	1-690-614-12	o	WIRE, FLEXIBLE (28P)
322	2-269-962-00	o	COVER, SWITCH
323	3-168-157-01	o	BRACKET (R), P.C.B
324	3-168-158-01	o	BRACKET (L), P.C.B
325	3-168-180-01	o	COVER, P.C.B
326	3-173-464-01	o	SHIELD (A), P.C.B VO-37
327	3-173-465-01	o	SHIELD (B), P.C.B VO-37
328	3-173-468-01	o	INSULATING SHEET, P.C.B RP-62
329	3-173-476-01	o	SHIELD PLATE, P.C.B VO-37
330	3-173-481-02	o	INSULATING SHEET, P.C.B DR-176A
331	3-173-491-02	o	SHIELD PLATE (A), P.C.B RP-62
332	3-173-492-01	o	SHIELD PLATE (B), P.C.B RP-62
333	3-176-113-01	o	COVER (A), FRAME
334	3-176-114-01	o	COVER (B), FRAME
335	3-176-124-31	o	PANEL, SUB
336	3-177-110-01	o	BRACKET, P.C.B HN-182
337	3-642-310-00	s	HOLDER, P.C.B
338	3-646-090-11	s	RIVET, NYLON
339	3-659-918-01	o	HEAT SINK, TRANSISTOR
340	3-680-613-01	o	SUPPORT, P.C.B
341	3-682-057-11	s	SPACER (SMALL)
342	3-688-814-01	s	CAP, POWER SWITCH
343	3-703-353-08	o	SUPPOTER, P.C.B
344	4-601-472-00	o	COVER, FUSE
345	4-924-098-31	o	HOLDER, PC BOARD

CASSETTE COMPARTMENT BLOCK

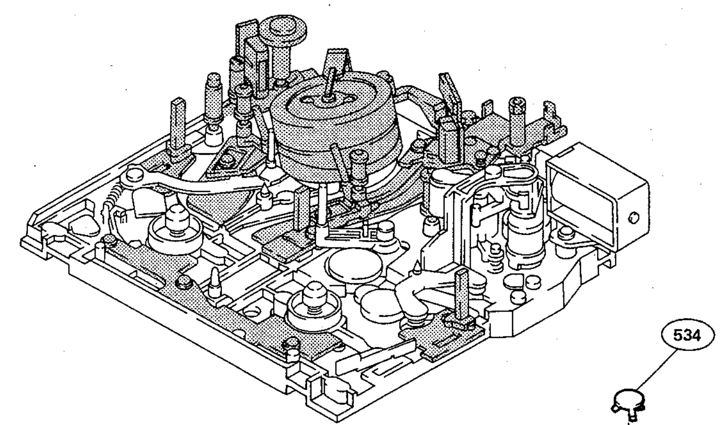
Cassette compartment block

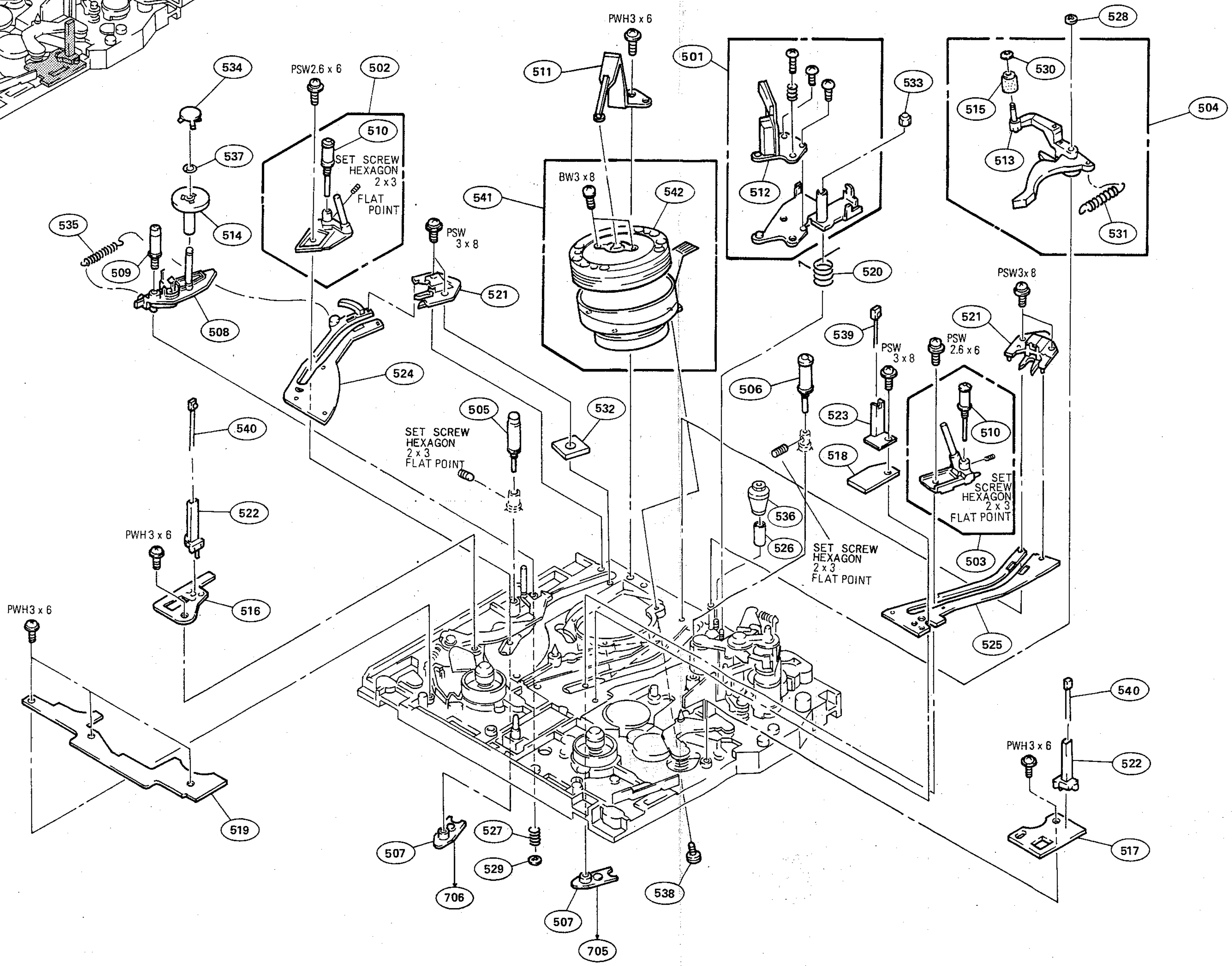

PWH3 x 6
PWH3 x 6
401
407
406
PS3 x 4
411
404
402
405
408
403
412
410
409

No.	Part No.	SP	Description
401	A-6751-446-A	s	FL BLOCK ASSY
402	X-3727-775-2	s	GEAR (RIGHT) ASSY, MIDWAY
403	X-3727-784-1	s	MOTOR ASSY
404	3-168-046-02	s	LEVER, PREVENTION
405	3-696-510-01	s	WASHER (3), STOPPER
406	3-716-144-02	s	RETAINER, WORM
407	3-736-100-01	s	GEAR (FL), WORM
408	3-736-164-01	s	WHEEL (FL), WORM
409	3-736-167-01	s	ARM, DOOR SWITCHING
410	3-738-285-01	s	SPRING, TENSION
411	3-739-687-01	s	SPRING, TENSION
412	3-945-199-31	s	DOOR, FL

15-7

Drum ass’y and tape run blocks





PWH3 x 6
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501
511
533
530
534
PSW2.6 x 6
502
515
504
510
SET SCREW
HEXAGON
2 x 3
FLAT
POINT
513
537
BW3 x 8
542
512
541
PSW
3 x 8
531
535
514
509
520
PSW3x 8
521
508
539
521
PSW
3 x 8
PSW
2.6 x 6
524
506
505
SET SCREW
HEXAGON
2 x 3
FLAT POINT
532
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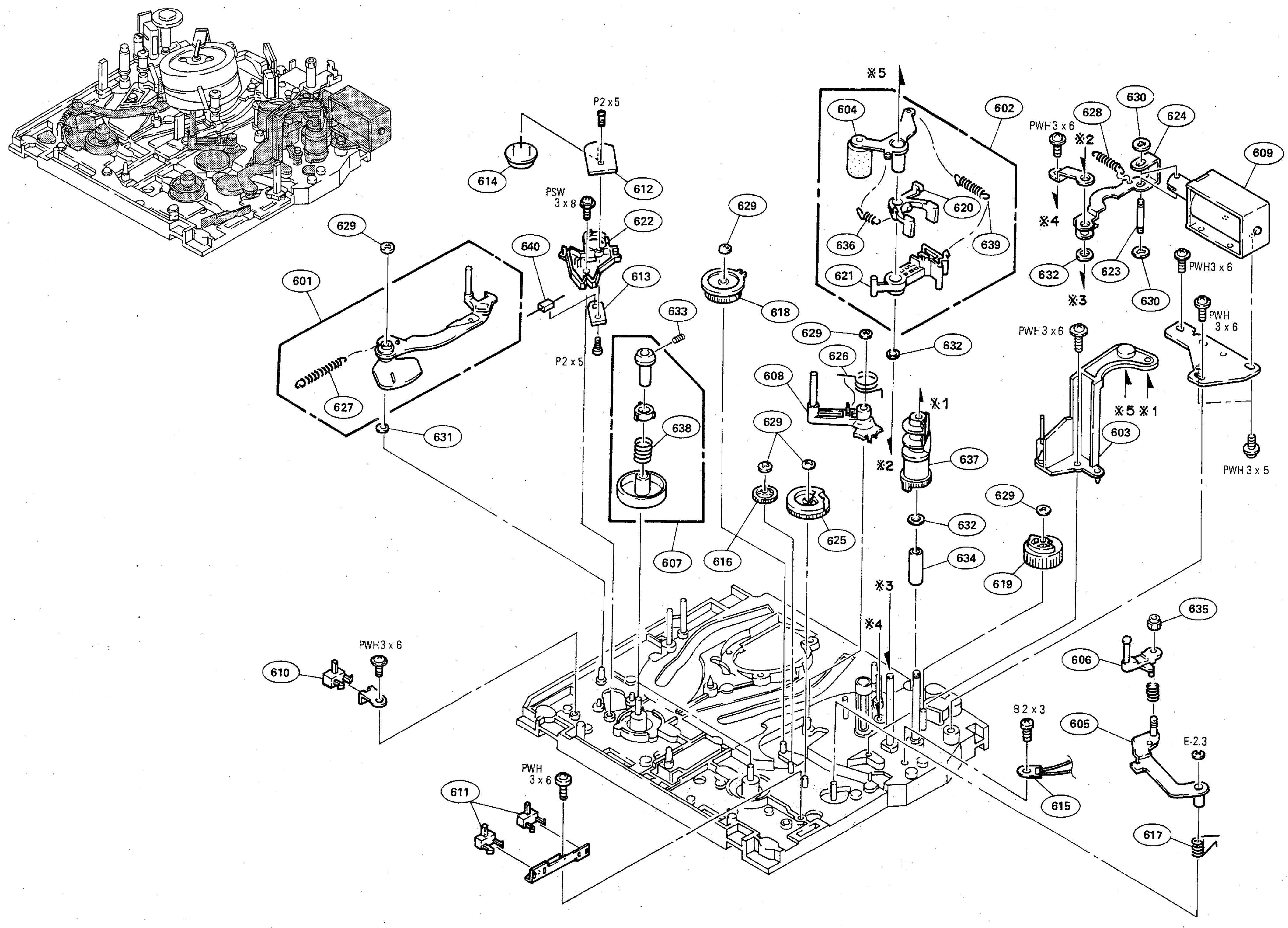
SET
SCREW
HEXAGON
2 x 3
FLAT POINT
536
522
526
SET SCREW
HEXAGON
2 x 3
FLAT POINT
PWH3 x 6
503
516
PWH3 x 6
525
540
PWH3 x 6
522
519
517
527
507
529
706
538
507
705

No.	Part No.	SP	Description
501	A-6736-092-A	s	HEAD ASSY, AUDIO
502	A-6746-062-B	s	SHUTTLE (LEFT) BLOCK ASSY
503	A-6746-063-B	s	SHUTTLE (RIGHT) BLOCK ASSY
504	A-6747-277-A	o	ROLLER BLOCK ASSY, MC
505	X-3165-325-2	s	ROLLER ASSY, No.1 GUIDE
506	X-3165-326-2	s	ROLLER ASSY, No.9 GUIDE
507	X-3165-329-1	o	PLATE ASSY, SHUTTLE
508	X-3165-335-1	o	BASE ASSY, STABILIZER
509	X-3165-336-1	s	ROLLER ASSY, No.2 GUIDE
510	X-3165-337-1	s	ROLLER ASSY, GUIDE
511	X-3165-584-1	s	GROUND ASSY, SHAFT
512	X-3165-588-1	o	HEAD ASSY, ACE
513	X-3166-556-1	o	ARM ASSY, MC ROLLER
514	X-3727-771-1	s	STABILIZER ASSY, TAPE
515	X-3743-515-4	s	ROLLER ASSY, C
516	1-637-245-13	o	PRINTED CIRCUT BOARD, SE-151
517	1-637-246-12	o	PRINTED CIRCUT BOARD, SE-152
518	1-637-247-11	o	PRINTED CIRCUT BOARD, LE-80
519	1-637-251-12	o	PRINTED CIRCUT BOARD, HN-160
520	3-166-987-01	s	SPRING, AH COIL
521	3-166-992-02	s	HOLDER, SHUTTLE
522	3-167-013-02	o	HOLDER, ST SENSOR
523	3-167-028-02	o	HOLDER, LED
524	3-167-034-02	s	RAIL (L), SLIDE
525	3-167-035-05	s	RAIL (R), SLIDE
526	3-177-109-01	s	SLEEVE
527	3-305-423-00	s	SPRING, COMPRESSION
528	3-650-537-00	o	WASHER
529	3-669-465-00	s	WASHER (1.5), STOPPER
530	3-669-595-00	s	WASHER (2), STOPPER
531	3-669-979-00	s	SPRING, TENSION
532	3-675-713-91	s	SPACER, VIDEO HEAD
533	3-736-041-01	s	NUT (N3), NYLON
534	3-736-082-01	s	RETAINER, TS THRUST
535	3-736-745-01	s	SPRING
536	3-738-250-01	s	SCREW, AC ADJUSTMENT
537	3-741-925-01	s	RING, RETAINING
538	3-899-248-11	s	SCREW (M3x8)
539	8-719-985-00	s	LED GL451VS1
540	8-729-926-31	s	PHOTO TRANSISTOR PT483F1S
541	8-848-578-12	s	DRUM ASSY, DZH-41A-R
542	8-848-579-02	s	UPPER DRUM ASSY, DZR-41-R

REEL TABLE AND PINCH ROLLER BLOCKS

Reel table and pinch roller blocks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P2 x 5
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614
PSW
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620
639
※4
640
613
636
621
632
623
629
601
618
633
630
PWH3 x 6
PWH
3 x 6
P2 x 5
629
626
632
608
※1
※5 ※1
627
638
629
603
631
※2
637
PWH 3 x 5
629
632
625
607
616
634
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PWH3 x 6
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610
B2 x 3
605
E-2.3
PWH
3 x 6
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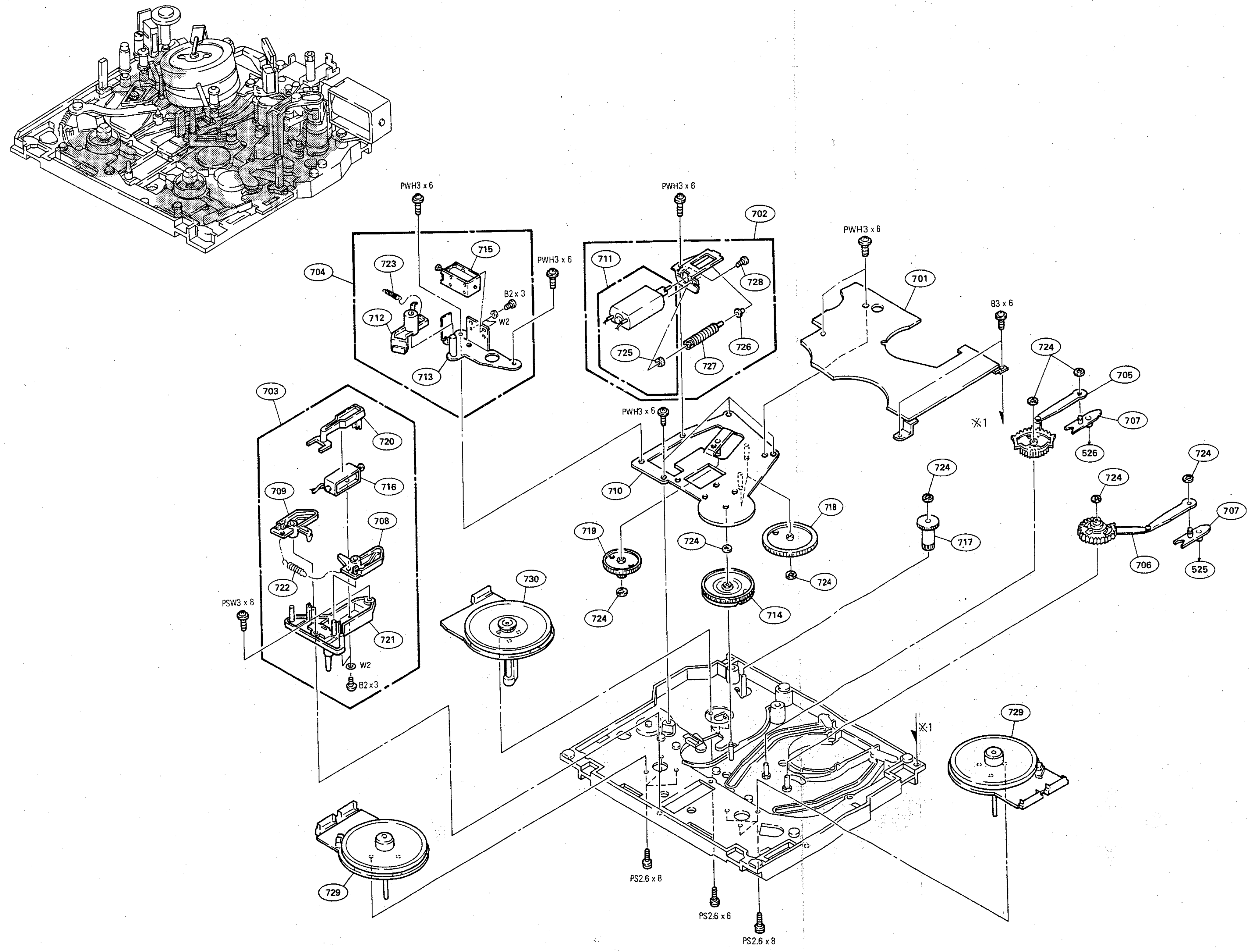
No.	Part No.	SP	Description
601	A-6742-071-A	s	ARM ASSY, TENSION REGULATOR
602	A-6750-279-C	s	PINCH ROLLER BLOCK ASSY
603	X-3166-781-1	s	OPENER ASSY, CASSETTE
604	X-3165-332-2	o	ARM ASSY, PINCH ROLLER
605	X-3165-340-1	o	ARM ASSY, RVS
606	X-3165-341-1	s	BASE ASSY, GUIDE
607	X-3165-345-1	s	TABLE ASSY, REEL
608	X-3166-369-2	s	GEAR ASSY, FR
609	1-454-434-21	s	SOLENOID, PLUNGER
610	1-570-771-11	s	SWITCH, MICRO
611	1-571-099-11	s	SWITCH, MICRO
612	1-637-249-11	o	PRINTED CIRCUIT BOARD, SE-159
613	1-637-250-11	o	PRINTED CIRCUIT BOARD, LE-86
614	1-806-232-21	s	DETECTOR MB-1102/S.N
615	1-806-682-91	s	SENSOR, DEW CONDENSATION
616	3-166-989-01	s	GEAR, RVS RELAY
617	3-166-991-01	s	SPRING, RVS COIL
618	3-167-006-01	s	GEAR, FR DRIVING .
619	3-167-008-01	s	GEAR, PRESS CAM
620	3-167-011-02	o	CONVEXITY BLOCK
621	3-167-012-02	o	ARM, PRESS LOCK
622	3-167-036-01	o	HOLDER, STD
623	3-174-491-01	o	PIN, SOLENOID
624	3-174-492-01	o	LEVER, PRESS
625	3-174-891-01	s	GEAR (2), RVS CAM
626	3-174-892-01	s	SPRING, FR COIL
627	3-490-159-00	s	SPRING, TENSION
628	3-646-209-11	s	SPRING, M-SW LEVER
629	3-669-596-00	s	WASHER (2.3), STOPPER
630	3-694-792-01	o	WASHER
631	3-701-439-11	s	WASHER, POLY 3MM DIA.,0.5t
632	3-701-443-21	s	WASHER, POLY 5MM DIA.,0.5t
633	3-701-506-01	s	SET SCREW, DOUBLE POINT 3x4
634	3-703-309-31	s	SPACER (5x18)
635	3-736-041-01	s	NUT (N3), NYLON
636	3-736-046-01	s	SPRING (RETURN), TENSION
637	3-736-136-01	s	CAM, ELEVATOR
638	3-739-621-01	s	SPRING, COMPRESSION
639	3-177-579-01	s	SPRING (PRESS 1.5), TENSION
640	8-719-821-22	s	LED TL0221, ORG

15-9

Mechanism control block


PWH3 x 6
PWH3 x 6
PWH3 x 6
PWH3 x 6
PWH3 x 6
B2 x 3
W2
B3 x 6
PSW3 x 6
W2
B2 x 3
PS2.6 x 8
PS2.6 x 6
PS2.6 x 8
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No.	Part No.	SP	Description
701	A-6715-460-A	o	MOUNTED CIRCUIT BOARD, DR-167
702	A-6737-203-C	s	MOTOR BLOCK ASSY, CAM
703	A-6741-069-A	o	BRAKE BLOCK ASSY, REEL
704	A-6741-070-A	o	BRAKE BLOCK ASSY, LDB
705	A-6750-281-A	s	GEAR (RIGHT) BLOCK ASSY, LOADING
706	A-6750-282-A	s	GEAR (LEFT) BLOCK ASSY, LOADING
707	X-3165-329-1	o	PLATE ASSY, SHUTTLE
708	X-3165-330-3	s	ARM (S) ASSY, BRAKE
709	X-3165-331-2	s	ARM (T) ASSY, BRAKE
710	X-3165-347-2	o	HOLDER ASSY, DRIVING GEAR
711	X-3165-593-3	o	MOTOR ASSY, CAM
712	X-3166-511-1	s	ARM ASSY, LDB
713	X-3166-512-2	o	LDB (BASE) ASSY
714	X-3166-575-1	s	GEAR (2) ASSY, MODE
715	1-454-334-71	s	SOLENOID, PLUNGER
716	1-454-531-11	s	SOLENOID, PLUNGER
717	3-166-988-01	s	GEAR, PINCH COMMUNICATION
718	3-167-001-01	s	GEAR, RELAY
719	3-167-081-01	s	WHEEL, WORM
720	3-167-834-01	o	SLIDER, B
721	3-167-835-01	o	CLAMP, M
722	3-492-141-XX	s	SPRING, TENSION
723	3-176-439-02	s	SPRING, TENSION
724	3-669-596-00	s	WASHER (2.3), STOPPER
725	3-696-388-01	s	RUBBER, JOINT
726	3-716-144-02	s	RETAINER, WORM
727	3-733-395-01	s	GEAR (CAM), WORM
728	7-627-553-28	s	SCREW, PRECISION +P 2x2.5
729	8-835-432-01	s	MOTOR, DC SRV-0201A
730	8-835-480-02	s	MOTOR, DC SCV-0401A

15-3. ELECTRICAL PARTS LIST

AC-148 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-645-568-11	o	PRINTED CIRCUIT BOARD, AC-148
2pcs	1-533-189-11	s	HOLDER, FUSE
1pc	3-168-180-01	o	COVER, AC PC BOARD
2pcs	3-646-090-11	s	RIVET, NYLON
1pcs	4-601-472-00	o	COVER, FUSE
C1	⚠1-136-211-00	s	FILM 0.022uF 20% 250
CN903	⚠1-564-321-00	o	CONNECTOR 2P, MALE
CN904	⚠1-564-215-11	o	CONNECTOR 4P, MALE
F1	⚠1-532-203-11	s	FUSE T2A 250V
L1	⚠1-409-399-11	s	COIL, SN 72uH
L2	⚠1-409-399-11	s	COIL, SN 72uH
R1	⚠1-214-937-00	s	METAL 1M 1% 1/2W

AH-28 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
CN616 R	1-506-483-21	s	CONNECTOR, 4P, MALE
CN618 W	1-506-481-11	s	CONNECTOR, 2P, MALE
H1001	X-3165-588-1	s	HEAD ASSY, ACE

AU-179C BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-521-A	o	MOUNTED CIRCUIT BOARD, AU-179C
1pc	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3x6
C1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C2	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C4	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C5	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C6	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C7	1-130-493-00	s	MYLAR 0.068uF 5% 50V
C8	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C10	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C11	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C13	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C14	1-126-163-11	s	ELECT 4.7uF 20% 50V
C14	*3 1-123-369-00	s	ELECT 4.7uF 20% 63V
C15	1-126-162-11	s	ELECT 3.3uF 20% 50V
C15	*3 1-123-382-00	s	ELECT 3.3uF 20% 100V
C17	1-124-589-11	s	ELECT 47uF 20% 16V
C17	*3 1-124-910-11	s	ELECT 47uF 20% 50V
C18	1-126-163-11	s	ELECT 4.7uF 20% 50V
C18	*3 1-123-369-00	s	ELECT 4.7uF 20% 63V
C20	1-126-160-11	s	ELECT 1uF 20% 50V
C21	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C22	1-124-589-11	s	ELECT 47uF 20% 16V
C23	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C24	1-126-163-11	s	ELECT 4.7uF 20% 50V
C25	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C26	1-124-239-00	s	ELECT 6.8uF 20% 25V
C27	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C28	1-124-589-11	s	ELECT 47uF 20% 16V
C29	1-126-157-11	s	ELECT 10uF 20% 16V
C30	1-126-934-11	s	ELECT 220uF 20% 16V
C30	*3 1-124-120-11	s	ELECT 220uF 20% 25V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C34	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C37	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C38	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C39	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C40	1-126-163-11	s	ELECT 4.7uF 20% 50V
C40	*3 1-123-369-00	s	ELECT 4.7uF 20% 63V
C41	1-126-162-11	s	ELECT 3.3uF 20% 50V
C41	*3 1-123-382-00	s	ELECT 3.3uF 20% 100V
C42	1-124-589-11	s	ELECT 47uF 20% 16V
C42	*3 1-124-910-11	s	ELECT 47uF 20% 50V
C43	1-126-163-11	s	ELECT 4.7uF 20% 50V
C43	*3 1-123-369-00	s	ELECT 4.7uF 20% 63V
C46	1-130-475-00	s	MYLAR 0.0022uF 5% 50V
C47	1-126-163-11	s	ELECT 4.7uF 20% 50V
C48	1-130-487-00	s	MYLAR 0.022uF 5% 50V
C49	1-124-239-00	s	ELECT 6.8uF 20% 25V
C50	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C51	1-126-157-11	s	ELECT 10uF 20% 16V
C52	1-126-934-11	s	ELECT 220uF 20% 16V
C52	*3 1-124-120-11	s	ELECT 220uF 20% 25V
C62	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C63	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C64	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C65	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C66	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(AU-179C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C67	1-126-934-11	s	ELECT 220uF 20% 16V
C201	1-124-257-00	s	ELECT 2.2uF 20% 50V
C203	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C206	1-126-163-11	s	ELECT 4.7uF 20% 50V
C207	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C209	1-124-589-11	s	ELECT 47uF 20% 16V
C211	1-126-160-11	s	ELECT 1uF 20% 50V
C214	1-126-157-11	s	ELECT 10uF 20% 16V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C217	1-126-163-11	s	ELECT 4.7uF 20% 50V
C218	1-124-584-00	s	ELECT 100uF 20% 10V
C219	1-131-587-11	s	TANTALUM 0.68uF 5% 35V
C226	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C232	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C233	1-126-157-11	s	ELECT 10uF 20% 16V
C237	1-124-589-11	s	ELECT 47uF 20% 16V
C238	DELETED.		
C238 *5	1-126-160-11	s	ELECT 1uF 20% 50V
C301	1-124-257-00	s	ELECT 2.2uF 20% 50V
C303	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C306	1-126-163-11	s	ELECT 4.7uF 20% 50V
C307	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C311	1-126-160-11	s	ELECT 1uF 20% 50V
C314	1-126-157-11	s	ELECT 10uF 20% 16V
C315	1-126-163-11	s	ELECT 4.7uF 20% 50V
C316	1-130-477-00	s	MYLAR 0.0033uF 5% 50V
C317	1-126-163-11	s	ELECT 4.7uF 20% 50V
C318	1-124-584-00	s	ELECT 100uF 20% 10V
C319	1-131-587-11	s	TANTALUM 0.68uF 5% 35V
C326	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C332	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C333	1-126-157-11	s	ELECT 10uF 20% 16V
C337	1-124-589-11	s	ELECT 47uF 20% 16V
C414	1-126-157-11	s	ELECT 10uF 20% 16V
C415	1-126-934-11	s	ELECT 220uF 20% 16V
C417	1-126-163-11	s	ELECT 4.7uF 20% 50V
C418	1-126-934-11	s	ELECT 220uF 20% 16V
CN306	1-506-468-11	s	CONNECTOR, 3P, MALE
CN307	1-506-473-11	s	CONNECTOR, 8P, MALE
CN308	1-506-471-11	s	CONNECTOR, 6P, MALE
CN310	1-506-474-11	s	CONNECTOR, 9P, MALE
CN311	1-506-478-11	s	CONNECTOR, 13P, MALE
CN312	1-506-475-11	s	CONNECTOR, 10P, MALE
CN313	1-506-472-11	s	CONNECTOR, 7P, MALE
CN315	1-506-468-11	s	CONNECTOR, 3P, MALE
CN316	1-506-468-11	s	CONNECTOR, 3P, MALE
CN317	1-506-471-11	s	CONNECTOR, 6P, MALE
D8	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D206	8-719-400-18	s	DIODE MA152WK
D206 *1	8-719-911-19	s	DIODE 1SS119
D302	8-719-400-18	s	DIODE MA152WK
D303	8-719-400-18	s	DIODE MA152WK
D306	8-719-400-18	s	DIODE MA152WK
D306 *1	8-719-911-19	s	DIODE 1SS119
D309	8-719-400-18	s	DIODE MA152WK
D409	8-719-400-18	s	DIODE MA152WK

(AU-179C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D410	8-719-911-19	s	DIODE 1SS119
D411	8-719-911-19	s	DIODE 1SS119
FL1	1-236-203-11	s	FILTER, BAND-PASS 1.3MHz
FL2	1-236-204-11	s	FILTER, BAND-PASS 1.7MHz
FL3	1-236-570-11	s	FILTER, BAND-PASS 1.4MHz
FL4	1-236-569-11	s	FILTER, BAND-PASS 1.8MHz
FL201	1-239-008-11	s	FILTER, LOW-PASS 110KHz
FL301	1-239-008-11	s	FILTER, LOW-PASS 110KHz
IC1	8-759-420-15	s	IC AN3932S
IC2	8-759-420-18	s	IC AN3972FC
IC3	8-759-064-91	s	IC NJM2233BL
IC4	8-759-064-91	s	IC NJM2233BL
IC5	8-759-035-93	s	IC SC7S32F
IC201	8-759-805-20	s	IC LA7297
IC202	8-752-057-20	s	IC CXA1102P
IC203	8-759-602-49	s	IC M5201P
IC204	8-759-602-49	s	IC M5201P
IC205	8-759-000-48	s	IC MC14052BCP
IC206	8-759-705-58	s	IC NJM4558D-D
IC301	8-759-805-20	s	IC LA7297
IC302	8-752-057-20	s	IC CXA1102P
IC303	8-759-602-49	s	IC M5201P
IC304	8-759-602-49	s	IC M5201P
IC401	8-759-708-09	s	IC NJM78L09A
IC401 *1	NOT IN USE.		
L2	1-410-470-11	s	INDUCTOR 10uH
L3	1-410-482-31	s	INDUCTOR 100uH
Q4	8-729-100-66	s	TRANSISTOR 2SC1623
Q5	8-729-901-06	s	TRANSISTOR DTA144EK
Q10	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q13	8-729-100-66	s	TRANSISTOR 2SC1623
Q15	8-729-901-01	s	TRANSISTOR DTC144EK
Q16	8-729-901-06	s	TRANSISTOR DTA144EK
Q17	8-729-901-06	s	TRANSISTOR DTA144EK
Q18	8-729-901-01	s	TRANSISTOR DTC144EK
Q20	8-729-202-38	s	TRANSISTOR 2SC3326N
Q21	8-729-202-38	s	TRANSISTOR 2SC3326N
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-901-01	s	TRANSISTOR DTC144EK
Q205	8-729-100-66	s	TRANSISTOR 2SC1623
Q217	8-729-202-38	s	TRANSISTOR 2SC3326N
Q219	DELETED.		
Q219 *5	8-729-202-38	s	TRANSISTOR 2SC3326N
Q224	DELETED.		
Q224 *1	8-729-901-01	s	TRANSISTOR DTC144EK
Q233	8-729-202-38	s	TRANSISTOR 2SC3326N
Q233 *5	NOT IN USE.		
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q305	8-729-100-66	s	TRANSISTOR 2SC1623
Q307	8-729-901-01	s	TRANSISTOR DTC144EK
Q313	8-729-901-06	s	TRANSISTOR DTA144EK
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q317	8-729-202-38	s	TRANSISTOR 2SC3326N
Q319	DELETED.		
Q319 *5	8-729-202-38	s	TRANSISTOR 2SC3326N
Q320	8-729-202-38	s	TRANSISTOR 2SC3326N

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(AU-179C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q322	8-729-901-06	s	TRANSISTOR DTA144EK
Q324	8-729-901-01	s	TRANSISTOR DTC144EK
Q329	8-729-202-38	s	TRANSISTOR 2SC3326N
Q333	8-729-202-38	s	TRANSISTOR 2SC3326N
Q333 *5	NOT IN USE.		
Q416	8-729-216-22	s	TRANSISTOR 2SA1162
Q422	8-729-901-06	s	TRANSISTOR DTA144EK
R1	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R2	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R3	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R5	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R6	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R7	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R8	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R9	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R11	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R12	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R13	1-216-685-11	s	METAL, CHIP 27K 0.5% 1/10W
R14	1-216-691-11	s	METAL, CHIP 47K 0.5% 1/10W
R15	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R16	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R17	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R18	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R20	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R21	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R22	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R23	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R24	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R25	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R29	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R30	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R31	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R32	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R33	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R41	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R42	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R43	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R44	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R49	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R50	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R53	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R55	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R56	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R57	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R58	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R59	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R60	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R64	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R77	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R78	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R79	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R80	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R81	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R82	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R83	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R84	1-216-673-11	s	METAL, CHIP 8.2K 0.5% 1/10W
R85	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

(AU-179C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R87	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R88	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R89	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R95	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R201	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R202	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R204	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R205	DELETED.		
R205 *1	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R206	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R208	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R209	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R210	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R211	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R213	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R214	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R216	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R218	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R221	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R222	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R223	1-216-662-11	s	METAL, CHIP 3K 0.5% 1/10W
R224	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R226	1-216-690-11	s	METAL, CHIP 43K 0.5% 1/10W
R227	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R228	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R250	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R251	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R252	DELETED.		
R252 *5	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R254	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R255	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R255 *5	NOT IN USE.		
R256	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R256 *5	NOT IN USE.		
R257	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R258	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R259	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R272	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R273	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R274	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R275	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R286	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R287	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R288	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R289	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R291	DELETED.		
R291 *5	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R301	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R302	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R304	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R305	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R306	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R308	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R309	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R310	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R311	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R313	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R314	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(AU-179C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R316	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R318	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R321	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R322	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R323	1-216-662-11	s	METAL, CHIP 3K 0.5% 1/10W
R324	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R326	1-216-690-11	s	METAL, CHIP 43K 0.5% 1/10W
R327	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R328	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R355	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R355 *5	NOT IN USE.		
R356	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R356 *5	NOT IN USE.		
R357	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R358	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R359	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R365	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R366	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R369	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R372	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R373	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R374	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R375	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R377	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R378	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R379	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R380	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R381	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R382	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R383	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R384	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R386	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R387	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R388	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R389	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R394	DELETED.		
R394 *5	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R396	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R398	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R433	1-249-407-11	s	CARBON 150 5% 1/4W
R434	1-216-017-00	s	METAL, CHIP 47 5% 1/10W
RJ2	1-216-295-00	s	METAL, CHIP 0-OHM
RJ4	1-216-295-00	s	METAL, CHIP 0-OHM
RJ4 *1	NOT IN USE.		
RJ5	1-216-295-00	s	METAL, CHIP 0-OHM
RJ5 *1	NOT IN USE.		
RJ6	1-216-295-00	s	METAL, CHIP 0-OHM
RJ7	1-216-295-00	s	METAL, CHIP 0-OHM
RJ8	1-216-295-00	s	METAL, CHIP 0-OHM
RJ9	1-216-295-00	s	METAL, CHIP 0-OHM
RJ10	1-216-295-00	s	METAL, CHIP 0-OHM
RJ11	1-216-295-00	s	METAL, CHIP 0-OHM
RJ12	1-216-295-00	s	METAL, CHIP 0-OHM
RJ14	1-216-295-00	s	METAL, CHIP 0-OHM
RJ14 *1	NOT IN USE.		
RJ15	1-216-295-00	s	METAL, CHIP 0-OHM
RJ15 *1	NOT IN USE.		

(AU-179C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
RJ16	1-216-295-00	s	METAL, CHIP 0-OHM
RJ17	1-216-295-00	s	METAL, CHIP 0-OHM
RJ18	1-216-295-00	s	METAL, CHIP 0-OHM
RJ19	DELETED.		
RJ19 *5	1-216-295-00	s	METAL, CHIP 0-OHM
RJ21	1-216-295-00	s	METAL, CHIP 0-OHM
RJ22	1-216-295-00	s	METAL, CHIP 0-OHM
RJ23	1-216-295-00	s	METAL, CHIP 0-OHM
RJ25	1-216-295-00	s	METAL, CHIP 0-OHM
RJ26	1-216-295-00	s	METAL, CHIP 0-OHM
RJ27	1-216-295-00	s	METAL, CHIP 0-OHM
RJ28	1-216-295-00	s	METAL, CHIP 0-OHM
RJ29	1-216-295-00	s	METAL, CHIP 0-OHM
RJ30	1-216-295-00	s	METAL, CHIP 0-OHM
RJ32	1-216-295-00	s	METAL, CHIP 0-OHM
RJ33	1-216-295-00	s	METAL, CHIP 0-OHM
RJ34	1-216-295-00	s	METAL, CHIP 0-OHM
RJ35	1-216-295-00	s	METAL, CHIP 0-OHM
RJ36	1-216-295-00	s	METAL, CHIP 0-OHM
RJ36 *5	NOT IN USE.		
RJ37	1-216-295-00	s	METAL, CHIP 0-OHM
RJ37 *5	NOT IN USE.		
RJ38	1-216-295-00	s	METAL, CHIP 0-OHM
RJ38 *5	NOT IN USE.		
RJ39	1-216-295-00	s	METAL, CHIP 0-OHM
RJ39 *5	NOT IN USE.		
RV1	1-238-020-11	s	RES, ADJ CARBON 100K
RV2	1-241-632-11	s	RES, ADJ CARBON 47K
RV4	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV5	DELETED.		
RV5 *1	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV8	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV9	DELETED.		
RV9 *1	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV10	1-238-020-11	s	RES, ADJ CARBON 100K
RV201	1-241-631-11	s	RES, ADJ CARBON 22K
RV202	1-241-632-11	s	RES, ADJ CARBON 47K
RV301	1-241-631-11	s	RES, ADJ CARBON 22K
RV302	1-241-632-11	s	RES, ADJ CARBON 47K

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

CP-223 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-457-A	o	MOUNTED CIRCUIT BOARD, CP-223
C1	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C2	1-126-786-11	s	ELECT 47uF 20% 16V
C3	1-126-786-11	s	ELECT 47uF 20% 16V
C4	1-126-786-11	s	ELECT 47uF 20% 16V
C5	1-126-786-11	s	ELECT 47uF 20% 16V
C20	1-124-584-00	s	ELECT 100uF 20% 10V
C25	1-126-786-11	s	ELECT 47uF 20% 16V
C26	1-126-786-11	s	ELECT 47uF 20% 16V
CN003	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN005	1-573-590-12	s	CONNECTOR, CIRCULAR 4P, FEMALE
CN006	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN007	1-691-273-11	s	JACK, PIN 1P, FEMALE
CN008	1-691-274-11	s	CONNECTOR, BNC, FEMALE
CN009	1-573-602-11	s	CONNECTOR, DIP 8P, FEMALE
CN011	1-573-744-11	s	JACK, PIN 2P, FEMALE
CN502	1-506-488-11	o	CONNECTOR, 9P, MALE
CN503	1-506-484-11	s	CONNECTOR, 5P, MALE
CN505	1-506-487-11	s	CONNECTOR, 8P, MALE
CN507	1-506-485-11	s	CONNECTOR, 6P, MALE
CN508	1-506-484-11	s	CONNECTOR, 5P, MALE
D1	8-719-800-76	s	DIODE 1SS226
D2	8-719-800-76	s	DIODE 1SS226
D3	8-719-800-76	s	DIODE 1SS226
D4	8-719-800-76	s	DIODE 1SS226
D5	8-719-800-76	s	DIODE 1SS226
D6	8-719-106-08	s	DIODE RD6.2M-B2
D18	8-719-200-02	s	DIODE 10E2
D19	8-719-200-02	s	DIODE 10E2
IC1	8-759-009-06	s	IC MC14052BF
IC5	8-759-982-04	s	IC RC5532M
Q7	8-729-202-38	s	TRANSISTOR 2SC3326N
Q8	8-729-202-38	s	TRANSISTOR 2SC3326N
Q10	8-729-202-38	s	TRANSISTOR 2SC3326N
Q11	8-729-202-38	s	TRANSISTOR 2SC3326N
Q12	8-729-202-38	s	TRANSISTOR 2SC3326N
Q13	8-729-202-38	s	TRANSISTOR 2SC3326N
Q14	8-729-140-93	s	TRANSISTOR 2SB733-34
R2	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R3	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R4	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R5	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R6	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R7	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R8	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R9	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R10	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R11	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R12	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R13	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R27	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R33	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R34	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R35	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R36	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R38	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R39	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R40	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R41	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R42	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R43	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
RY1	1-515-614-11	s	RELAY

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

CR-42 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-528-A	o	MOUNTED CIRCUIT BOARD, CR-42
C501	1-124-589-11	s	ELECT 47uF 20% 16V
C502	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C503	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C504	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C505	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C506	1-126-162-11	s	ELECT 3.3uF 20% 50V
C507	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C508	1-126-162-11	s	ELECT 3.3uF 20% 50V
C509	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C510	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C511	1-126-162-11	s	ELECT 3.3uF 20% 50V
C512	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C513	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C514	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C515	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C516	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C517	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C518	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C519	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C520	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C521	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C522	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C523	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C524	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C525	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C526	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C527	1-126-301-11	s	ELECT 1uF 20% 50V
C528	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C529	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C530	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C531	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C532	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C533	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C534	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C535	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C536	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C537	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C538	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C539	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C540	1-126-301-11	s	ELECT 1uF 20% 50V
C541	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C542	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C543	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C544	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C545	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C546	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C547	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C548	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C549	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C550	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C551	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C553	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C554	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C555	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C604	1-163-087-00	s	CERAMIC, CHIP 4pF 50V

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C605	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C606	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C607	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C608	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C609	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C610	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C611	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C612	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C613	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C614	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C615	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C616	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C617	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C618	1-124-589-11	s	ELECT 47uF 20% 16V
C619	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C620	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C621	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C622	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C623	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C624	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C625	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C626	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C627	1-131-377-00	s	TANTALUM 10uF 10% 10V
C628	1-131-342-00	s	TANTALUM 0.15uF 10% 35V
C629	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C630	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C631	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C632	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C633	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C634	1-163-114-00	s	CERAMIC, CHIP 75pF 5% 50V
C635	1-163-124-00	s	CERAMIC, CHIP 200pF 5% 50V
C636	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C637	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C638	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C639	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C640	1-126-177-11	s	ELECT 100uF 20% 10V
C641	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C642	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C643	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C644	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C645	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C646	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C647	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C648	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C649	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C651	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C653	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C654	1-131-349-00	s	TANTALUM 2.2uF 10% 35V
C655	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C655 *1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C656	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C657	1-126-923-11	s	ELECT 220uF 20% 10V
C658	1-163-222-11	s	CERAMIC, CHIP 5pF 0.25pF 50V
C659	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C660	1-124-463-00	s	ELECT 0.1uF 20% 50V
C661	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C662	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C664	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C665	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C666	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C667	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C670	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C671	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C675	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C676	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C677	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C678	1-131-341-00	s	TANTALUM 0.1uF 10% 35V
C679	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C680	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C681	1-124-589-11	s	ELECT 47uF 20% 16V
C682	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C683	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C687	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C689	1-124-589-11	s	ELECT 47uF 20% 16V
C690	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C691	1-163-134-00	s	CERAMIC, CHIP 510pF 5% 50V
C692	1-124-455-00	s	ELECT 100uF 20% 16V
C693	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C694	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C695	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C697	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C698	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C699	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C700	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C701	1-163-088-00	s	CERAMIC, CHIP 5pF 50V
C702	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C703	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C704	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C705	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C706	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C707	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C708	1-163-126-00	s	CERAMIC, CHIP 240pF 5% 50V
C709	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C710	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C711	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C712	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C713	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C715	1-124-589-11	s	ELECT 47uF 20% 16V
C716	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C717	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C718	1-126-177-11	s	ELECT 100uF 20% 10V
C720	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C721	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C723	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C725	1-107-085-00	s	MICA 100pF 5% 50V
C730	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C731	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C732	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C733	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C734	1-124-589-11	s	ELECT 47uF 20% 16V
C735	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C736	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C737	1-124-589-11	s	ELECT 47uF 20% 16V
C738	1-130-484-00	s	MYLAR 0.012uF 5% 50V
C740	1-161-772-11	s	CERAMIC 0.1uF 10% 25V
C801	1-124-589-11	s	ELECT 47uF 20% 16V
C802	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C803	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C804	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C805	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C806	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C807	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C808	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C809	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C810	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C811	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C812	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C814	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C815	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C816	1-126-923-11	s	ELECT 220uF 20% 10V
C817	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C818	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C819	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C820	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C821	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C822	1-163-139-00	s	CERAMIC, CHIP 820pF 5% 50V
C823	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C824	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C825	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C826	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C828	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C829	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C830	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C831	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C832	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C833	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C834	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C835	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C836	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C837	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C838	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C840	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C841	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C842	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C843	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C844	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C845	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C846	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C911	1-124-455-00	s	ELECT 100uF 20% 16V
C912	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C913	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C914	1-124-589-11	s	ELECT 47uF 20% 16V
C915	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C916	1-126-177-11	s	ELECT 100uF 20% 10V
C917	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C918	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C921	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C922	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C923	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
CN212	1-562-686-11	o	CONNECTOR, FPC 26P
CN214	1-506-491-11	o	CONNECTOR, 12P, MALE
CN215	1-506-482-11	s	CONNECTOR, 3P, MALE
CV601	1-141-276-00	s	CAP, TRIMMER 20pFF
CV602	1-141-365-11	s	CAP, TRIMMER 100pF
CV603	1-141-365-11	s	CAP, TRIMMER 100pF
CV800	1-141-276-00	s	CAP, TRIMMER 20pF

*1 SEREAL NO. 10001-10030
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Ref. No. or Q'ty	Part No.	SP	Description
CV801	1-141-365-11	s	CAP, TRIMMER 100pF
CV802	1-141-365-11	s	CAP, TRIMMER 100pF
D501	8-719-400-18	s	DIODE MA152WK
D600	8-719-109-81	s	DIODE RD4.7ES-B2
D600 *1	NOT IN USE.		
D700	8-719-800-76	s	DIODE 1SS226
D801	8-719-800-76	s	DIODE 1SS226
D802	8-719-400-18	s	DIODE MA152WK
D803	8-719-400-18	s	DIODE MA152WK
FL601	1-236-835-11	s	FILTER, BAND-PASS 4,43MHz
FL602	1-235-437-11	s	FILTER, BAND-PASS 4.43MHz
FL603	1-236-928-11	s	FILTER, LOW-PASS 1.0MHz
FL604	1-231-280-00	s	FILTER, CERAMIC 4.43MHZ
FL605	1-239-325-11	s	FILTER, BAND-PASS 5.06MHz
IC501	8-752-333-24	s	IC CXL1506M
IC601	8-759-710-86	s	IC NJM2233BM
IC602	8-752-322-34	s	IC CXL5003M
IC603	8-759-634-93	s	IC M52059AFP
IC604	8-759-201-47	s	IC TA7357AP
IC605	8-759-710-86	s	IC NJM2233BM
IC606	8-759-710-86	s	IC NJM2233BM
IC607	8-759-710-86	s	IC NJM2233BM
IC608	8-759-710-86	s	IC NJM2233BM
IC901	8-759-520-06	s	IC XRA17809T
L501	1-410-482-31	s	INDUCTOR 100uH
L502	1-410-470-11	s	INDUCTOR 10uH
L503	1-410-478-11	s	INDUCTOR 47uH
L504	1-408-414-00	s	INDUCTOR 27uH
L505	1-408-413-00	s	INDUCTOR 22uH
L506	1-408-413-00	s	INDUCTOR 22uH
L507	1-408-414-00	s	INDUCTOR 27uH
L508	1-408-414-00	s	INDUCTOR 27uH
L509	1-408-414-00	s	INDUCTOR 27uH
L510	1-408-413-00	s	INDUCTOR 22uH
L511	1-408-414-00	s	INDUCTOR 27uH
L512	1-410-470-11	s	INDUCTOR 10uH
L513	1-408-413-00	s	INDUCTOR 22uH
L514	1-408-414-00	s	INDUCTOR 27uH
L515	1-408-413-00	s	INDUCTOR 22uH
L516	1-410-464-11	s	INDUCTOR 3.3uH
L518	1-410-470-11	s	INDUCTOR 10uH
L601	1-410-482-31	s	INDUCTOR 100uH
L602	1-408-413-00	s	INDUCTOR 22uH
L603	1-408-424-00	s	INDUCTOR 180UH
L604	1-408-413-00	s	INDUCTOR 22uH
L605	1-410-482-31	s	INDUCTOR 100uH
L606	1-408-425-00	s	INDUCTOR 220uH
L607	1-410-482-31	s	INDUCTOR 100uH
L608	1-410-482-31	s	INDUCTOR 100uH
L609	1-410-471-11	s	INDUCTOR 12uH
L611	1-408-420-00	s	INDUCTOR 82uH
L612	1-408-424-00	s	INDUCTOR 180UH
L613	1-410-476-11	s	INDUCTOR 33uH
L615	1-410-478-11	s	INDUCTOR 47uH
L616	1-410-478-11	s	INDUCTOR 47uH
L618	1-410-482-31	s	INDUCTOR 100uH
L619	1-410-482-31	s	INDUCTOR 100uH
L620	1-410-482-31	s	INDUCTOR 100uH

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Ref. No. or Q'ty	Part No.	SP	Description
L700	1-410-482-31	s	INDUCTOR 100uH
L701	1-408-429-00	s	INDUCTOR 470uH
L801	1-408-419-00	s	INDUCTOR 68uH
L802	1-408-422-00	s	INDUCTOR 120uH
L803	1-408-413-00	s	INDUCTOR 22uH
L804	1-408-420-00	s	INDUCTOR 82uH
L805	1-410-473-11	s	INDUCTOR 18uH
L806	1-410-471-11	s	INDUCTOR 12uH
L807	1-408-411-00	s	INDUCTOR 15uH
L808	1-408-411-00	s	INDUCTOR 15uH
L809	1-408-427-00	s	INDUCTOR 330uH
PS101	1-532-605-00	s	LINK, IC 0.4A
Q502	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q503	8-729-216-22	s	TRANSISTOR 2SA1162
Q504	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q505	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q506	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q507	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q508	8-729-216-22	s	TRANSISTOR 2SA1162
Q509	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q510	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q511	8-729-216-22	s	TRANSISTOR 2SA1162
Q512	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q513	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q514	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q515	8-729-903-10	s	TRANSISTOR FMW1
Q516	8-729-903-97	s	TRANSISTOR FMS1FE
Q517	8-729-903-97	s	TRANSISTOR FMS1FE
Q518	8-729-903-10	s	TRANSISTOR FMW1
Q519	8-729-907-46	s	TRANSISTOR IMZ1
Q520	8-729-903-10	s	TRANSISTOR FMW1
Q521	8-729-903-97	s	TRANSISTOR FMS1FE
Q522	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q523	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q524	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q525	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q526	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q527	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q528	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q529	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q530	8-729-903-97	s	TRANSISTOR FMS1FE
Q531	8-729-903-10	s	TRANSISTOR FMW1
Q532	8-729-903-97	s	TRANSISTOR FMS1FE
Q533	8-729-903-10	s	TRANSISTOR FMW1
Q534	8-729-907-46	s	TRANSISTOR IMZ1
Q535	8-729-903-10	s	TRANSISTOR FMW1
Q536	8-729-903-97	s	TRANSISTOR FMS1FE
Q537	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q538	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q539	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q540	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q541	8-729-901-01	s	TRANSISTOR DTC144EK
Q543	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q545	8-729-901-01	s	TRANSISTOR DTC144EK
Q548	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q549	8-729-202-38	s	TRANSISTOR 2SC3326N
Q550	8-729-903-97	s	TRANSISTOR FMS1FE

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Ref. No. or Q'ty	Part No.	SP	Description
Q601	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q602	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q604	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q605	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q606	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q607	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q608	8-729-216-22	s	TRANSISTOR 2SA1162
Q609	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q610	8-729-216-22	s	TRANSISTOR 2SA1162
Q611	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q612	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q613	8-729-901-01	s	TRANSISTOR DTC144EK
Q614	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q615	8-729-901-01	s	TRANSISTOR DTC144EK
Q616	8-729-901-01	s	TRANSISTOR DTC144EK
Q618	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q619	8-729-901-01	s	TRANSISTOR DTC144EK
Q620	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q621	8-729-202-38	s	TRANSISTOR 2SC3326N
Q622	DELETED.		
Q622 *2	8-729-901-01	s	TRANSISTOR DTC144EK
Q623	8-729-216-22	s	TRANSISTOR 2SA1162
Q629	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q630	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q631	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q632	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q634	8-729-901-01	s	TRANSISTOR DTC144EK
Q636	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q637	8-729-901-01	s	TRANSISTOR DTC144EK
Q638	8-729-901-01	s	TRANSISTOR DTC144EK
Q639	8-729-216-22	s	TRANSISTOR 2SA1162
Q640	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q641	8-729-901-01	s	TRANSISTOR DTC144EK
Q641 *1	8-729-202-38	s	TRANSISTOR 2SC3326N
Q642	8-729-901-01	s	TRANSISTOR DTC144EK
Q643	8-729-901-06	s	TRANSISTOR DTA144EK
Q644	8-729-216-22	s	TRANSISTOR 2SA1162
Q645	8-729-901-06	s	TRANSISTOR DTA144EK
Q646	8-729-900-89	s	TRANSISTOR DTC144ES
Q646 *1	NOT IN USE.		
Q647	8-729-900-89	s	TRANSISTOR DTC144ES
Q647 *1	NOT IN USE.		
Q700	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q701	8-729-202-38	s	TRANSISTOR 2SC3326N
Q702	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q704	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q705	8-729-901-01	s	TRANSISTOR DTC144EK
Q706	8-729-901-01	s	TRANSISTOR DTC144EK
Q707	8-729-202-38	s	TRANSISTOR 2SC3326N
Q708	8-729-202-38	s	TRANSISTOR 2SC3326N
Q710	8-729-203-48	s	TRANSISTOR 2SC3327-A
Q801	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q802	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q803	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q804	8-729-907-26	s	TRANSISTOR IMX1
Q805	8-729-903-10	s	TRANSISTOR FMW1
Q806	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q807	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q808	8-729-230-49	s	TRANSISTOR 2SC2712YG

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q809	8-729-903-97	s	TRANSISTOR FMS1FE
Q810	8-729-903-10	s	TRANSISTOR FMW1
Q811	8-729-903-97	s	TRANSISTOR FMS1FE
Q812	8-729-903-10	s	TRANSISTOR FMW1
Q813	8-729-216-22	s	TRANSISTOR 2SA1162
Q814	8-729-907-26	s	TRANSISTOR IMX1
Q815	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q816	8-729-903-10	s	TRANSISTOR FMW1
Q817	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q818	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q819	8-729-216-22	s	TRANSISTOR 2SA1162
Q820	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q821	8-729-216-22	s	TRANSISTOR 2SA1162
Q822	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q823	8-729-216-22	s	TRANSISTOR 2SA1162
Q824	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q825	8-729-216-22	s	TRANSISTOR 2SA1162
Q826	8-729-216-22	s	TRANSISTOR 2SA1162
Q827	8-729-907-26	s	TRANSISTOR IMX1
Q828	8-729-907-26	s	TRANSISTOR IMX1
Q829	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q830	8-729-907-26	s	TRANSISTOR IMX1
Q831	8-729-216-22	s	TRANSISTOR 2SA1162
Q832	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q833	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q834	8-729-216-22	s	TRANSISTOR 2SA1162
Q835	8-729-216-22	s	TRANSISTOR 2SA1162
Q836	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q837	8-729-230-49	s	TRANSISTOR 2SC2712YG
R501	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R502	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R503	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R505	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R506	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R507	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R508	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R509	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R511	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R512	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R513	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R514	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R515	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R516	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R517	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R519	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R520	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R521	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R522	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R523	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R524	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R525	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R526	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R527	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R528	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R529	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R530	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R531	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R532	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R533	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R534	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R535	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R536	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R537	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R538	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R539	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R540	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R541	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R542	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R543	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R544	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R545	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R546	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R547	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R548	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R549	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R550	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R551	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R552	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R553	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R554	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R555	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R556	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R557	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R558	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R559	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R560	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R561	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R562	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R563	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R564	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R565	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R566	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R567	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R568	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R569	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R570	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R571	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R572	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R573	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R576	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R577	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R578	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R579	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R580	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R581	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R582	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R583	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R584	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R585	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R586	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R587	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R588	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R589	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R590	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R591	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R592	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R593	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R594	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R595	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R596	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R597	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R598	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R601	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R602	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R603	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R604	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R605	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R606	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R607	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R608	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R609	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R610	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R612	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R614	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R615	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R616	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R617	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R618	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R619	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R620	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R621	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R622	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R623	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R624	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R625	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R626	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R627	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R628	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R629	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R630	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R631	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R632	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R633	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R634	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R636	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R637	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R639	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R640	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R641	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R642	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R643	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R644	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R646	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R647	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R648	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R649	1-215-445-00	s	METAL 10K 1% 1/6W
R650	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R651	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R652	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R653	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R654	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R655	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R656	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R657	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R658	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

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Ref. No. or Q'ty	Part No.	SP	Description
R659	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R660	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R661	1-216-009-00	s	METAL, CHIP 22 5% 1/10W
R663	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R664	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R665	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R666	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R667	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R668	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R669	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R669 *1	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R670	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R671	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R672	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R673	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R674	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R676	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R677	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R678	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R679	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R680	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R681	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R682	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R683	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R684	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R685	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R686	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R687	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R688	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R689	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R690	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R693	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R694	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R695	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R696	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R697	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R698	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R699	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R700	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R701	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R704	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R705	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R706	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R708	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R712	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R714	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R715	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R716	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R719	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R721	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R722	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R723	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R724	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R725	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R726	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R727	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R729	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R730	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R731	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R732	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R733	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R734	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R735	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R736	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R737	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R738	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R739	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R750	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R751	1-216-605-11	s	METAL 12 0.50% 1/10W
R752	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R753	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R754	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R755	1-216-623-11	s	METAL, CHIP 68 0.5% 1/10W
R756	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R757	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R758	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R759	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R760	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R761	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R762	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R763	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R764	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R765	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R766	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R767	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R768	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R768 *1	1-216-658-11	s	METAL, CHIP 2K 0.5% 1/10W
R769	DELETED.		
R769 *1	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R772	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R773	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R774	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R775	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R776	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R777	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R778	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R779	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R780	1-217-666-31	s	RES, SHORTING 0.01 1/6W
R781	1-249-429-11	s	CARBON 10K 5% 1/4W
R782	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R782 *1	NOT IN USE.		
R783	1-249-419-11	s	CARBON 1.5K 5% 1/4W
R783 *1	NOT IN USE.		
R801	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R802	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R803	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R804	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R805	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R806	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R807	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R808	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R809	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R810	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R811	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R812	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R813	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R814	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R815	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R816	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R817	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R818	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R819	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R820	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R821	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R822	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R823	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R824	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R825	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R827	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R828	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R829	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R830	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R831	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R832	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R833	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R834	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R835	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R836	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R837	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R838	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R839	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R840	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R841	1-216-029-00	s	METAL, CHIP 150 5% 1/10W
R842	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R843	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R844	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R845	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R846	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R847	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R848	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R849	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R850	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R851	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R852	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R853	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R854	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R855	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R856	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R857	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R858	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R859	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R860	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R861	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R862	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R863	1-216-633-11	s	METAL, CHIP 180 0.5% 1/10W
R864	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R865	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R866	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R867	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R868	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R869	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
R870	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R871	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R872	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R874	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R875	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R876	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R877	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R878	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R879	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R880	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R881	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R882	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R883	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R884	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R885	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R886	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R887	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R888	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R889	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R890	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R891	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R892	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R893	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R894	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R895	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R896	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R897	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R898	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R899	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R900	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R901	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R902	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R903	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R904	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R905	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R906	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R907	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R931	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R935	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R936	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R937	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R938	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R939	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R941	1-216-295-00	s	METAL, CHIP 0-OHM
R942	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R943	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R944	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R945	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R946	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R949	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R950	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R951	1-216-100-00	s	METAL, CHIP 130K 0.5% 1/10W
R952	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R953	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R954	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R955	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R956	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R959	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R960	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R961	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R962	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
RV501	1-238-012-11	s	RES, ADJ CARBON 1K
RV502	1-238-011-11	s	RES, ADJ CARBON 470
RV601	1-238-012-11	s	RES, ADJ CARBON 1K
RV602	1-238-019-11	s	RES, ADJ CARBON 47K

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(CR-42 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
RV603	1-238-017-11	s	RES, ADJ CARBON 22K
RV604	1-238-019-11	s	RES, ADJ CARBON 47K
RV606	1-238-017-11	s	RES, ADJ CARBON 22K
RV700	1-238-017-11	s	RES, ADJ CARBON 22K
RV800	1-238-011-11	s	RES, ADJ CARBON 470
RV801	1-238-011-11	s	RES, ADJ CARBON 470
RV802	1-238-011-11	s	RES, ADJ CARBON 470
RV860	1-238-015-11	s	RES, ADJ CARBON 4.7K
RV860 *1	1-238-013-11	s	RES, ADJ CARBON 2.2K
X601	1-567-504-11	s	OSCILLATOR, CRYSTAL 4.43MHz
X701	1-579-674-11	s	OSCILLATOR, CRYSTAL 4.46MHz

DP-166 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-643-491-11	o	PRINTED CIRCUIT BOARD, DP-166
D101	8-719-901-64	s	LED LT-9200D
D102	8-719-901-64	s	LED LT-9200D
D103	8-719-901-66	s	LED LT-9200N
D104	8-719-901-66	s	LED LT-9200N
D109	8-719-400-18	s	DIODE MA152WK
D110	8-719-400-18	s	DIODE MA152WK
D111	8-719-400-18	s	DIODE MA152WK
ND101	8-719-942-19	s	LED LB402VK
ND102	8-719-942-19	s	LED LB402VK
ND103	8-719-942-19	s	LED LB402VK
R101	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R102	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R103	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R106	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R107	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R108	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
S101	1-570-472-11	s	SWITCH, PUSH
S102	1-570-846-11	s	SWITCH, SLIDE

DR-153 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6756-022-A	o	MOUNTED CIRCUIT BOARD, DR-153
C1	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C2	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C3	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
CN1	1-568-260-21	s	CONNECTOR 9P, MALE
CN2	1-568-260-21	s	CONNECTOR 9P, MALE
CN3	1-568-260-21	s	CONNECTOR 9P, MALE
IC1	8-759-207-46	s	IC TA7262P-LB
R1	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R2	1-216-045-00	s	METAL, CHIP 680 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

DR-167 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-6715-460-A	o	MOUNTED CIRCUIT BOARD, DR-167
1pc	1-569-193-11	o	CONTACT, FEMALE AWG24-30
1pc	1-569-195-11	s	HOUSING 2P
2pcs	7-685-871-01	s	SCREW +BVTT 3x6 (S)
C4	1-126-160-11	s	ELECT 1uF 20% 50V
C5	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C6	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C7	1-161-061-11	s	CERAMIC 0.068uF 10% 25V
C8	1-161-061-11	s	CERAMIC 0.068uF 10% 25V
C9	1-124-120-11	s	ELECT 220uF 20% 25V
C10	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C11	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C12	1-126-162-11	s	ELECT 3.3uF 20% 50V
C13	1-161-061-11	s	CERAMIC 0.068uF 10% 25V
CN633	1-506-482-11	s	CONNECTOR, 3P, MALE
CN636	1-691-285-11	s	CONNECTOR 10P, FEMALE
CN637	1-691-285-11	s	CONNECTOR 10P, FEMALE
D1	8-719-200-02	s	DIODE 10E2
D2	8-719-200-02	s	DIODE 10E2
IC1	8-759-234-03	s	IC TA8424F
IC2	8-719-939-11	s	PHOTO INTERRUPTER GP-2S09-B
IC3	8-719-939-11	s	PHOTO INTERRUPTER GP-2S09-B
IC4	8-719-939-11	s	PHOTO INTERRUPTER GP-2S09-B
R1	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R2	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R3	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R4	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R5	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R6	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R7	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R8	⚠1-249-377-11	s	CARBON 0.47 5% 1/4W
R18	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R19	1-216-303-11	s	METAL, CHIP 3 5% 1/10W
R20	1-216-303-11	s	METAL, CHIP 3 5% 1/10W

DR-176A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-369-A	o	MOUNTED CIRCUIT BOARD, DR-176A
1pc	3-173-481-02	o	SHEET, INSULATING, DR
3pcs	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3x6
C1	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C3	1-124-589-11	s	ELECT 47uF 20% 16V
C4	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C5	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C14	1-124-589-11	s	ELECT 47uF 20% 16V
C15	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C16	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C17	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C18	1-126-163-11	s	ELECT 4.7uF 20% 50V
C20	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C21	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C22	1-130-491-00	s	MYLAR 0.047uF 5% 50V
CN631	1-563-493-11	s	CONNECTOR, FPC 28P
CN632	1-506-488-11	s	CONNECTOR, 9P, MALE
CN638	1-691-271-11	s	CONNECTOR, 10P, MALE
CN639	1-691-271-11	s	CONNECTOR, 10P, MALE.
IC5	8-759-710-77	s	IC NJM4560MD
Q1	8-729-140-96	s	TRANSISTOR 2SD774-4
Q2	8-729-924-90	s	TRANSISTOR 2SB1370-EF
R9	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R10	⚠1-216-365-00	s	METAL 0.47 5% 2W
R11	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R12	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R13	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R14	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R15	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R16	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R17	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R21	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R22	1-216-033-00	s	METAL, CHIP 220 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

DUS-445 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
C318	1-126-160-11	s	ELECT 1uF 20% 50V
C319	1-126-160-11	s	ELECT 1uF 20% 50V
C350	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
CN153	1-566-095-11	o	CONNECTOR, BB 6P, MALE
CN154	1-566-095-11	o	CONNECTOR, BB 6P, MALE
IC307	8-759-340-13	s	IC HD14013BP
IC308	8-759-045-38	s	IC MC14538BCP
R327	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R331	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R335	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R342	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R343	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W

DUS-535 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
C810	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C811	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C812	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C813	1-126-096-11	s	ELECT 10uF 20% 35V
C814	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C815	1-163-019-00	s	CERAMIC, CHIP 0.0068uF 10% 50V
C816	1-124-598-11	s	ELECT 22uF 20% 25V
C817	1-124-598-11	s	ELECT 22uF 20% 25V
C818	1-124-598-11	s	ELECT 22uF 20% 25V
C819	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C820	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C821	1-124-598-11	s	ELECT 22uF 20% 25V
C822	DELETED.		
C822 *1	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C823	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C824	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C830	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
CN810	1-691-271-11	s	CONNECTOR 10P, MALE
CN811	1-691-271-11	s	CONNECTOR 10P, MALE
D810	8-719-104-34	s	DIODE 1S2836
D811	8-719-104-34	s	DIODE 1S2836
D812	8-719-104-34	s	DIODE 1S2836
D813	8-719-104-34	s	DIODE 1S2836
D815	8-719-106-16	s	DIODE RD6.8M-B1
IC811	8-759-140-53	s	IC UPD4053BC
IC812	8-759-705-58	s	IC NJM4558D-D
IC813	8-759-729-03	s	IC NJM2903D
IC814	8-759-140-53	s	IC UPD4053BC
L810	1-408-422-00	s	INDUCTOR 120uH
Q810	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q811	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q812	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q813	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q814	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q815	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q816	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q817	8-729-901-05	s	TRANSISTOR DTA124EK
Q818	8-729-901-00	s	TRANSISTOR DTC124EK
R810	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R811	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R812	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R813	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R814	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R815	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R816	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R817	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R818	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R819	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R820	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R822	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R823	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R824	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R825	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R826	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R827	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R828	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W

*1 SERIAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(DUS-535 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R829	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R830	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R831	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R832	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R833	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R834	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R835	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R836	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R837	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R838	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R839	DELETED.		
R839 *1	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R840	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R841	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R842	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R843	DELETED.		
R843 *1	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W

DUS-544 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-644-095-12	o	PRINTED CIRCUIT BOARD, DUS-544
C1	1-126-768-11	s	ELECT 2200uF 20% 16V
CN1	1-506-481-11	s	CONNECTOR, 2P, MALE

DUS-592 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8276-478-A	o	MOUNTED CIRCUIT BOARD, DUS-592
C1	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C2	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C3	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
L1	1-410-384-31	s	INDUCTOR, CHIP 18uH
L2	1-410-390-11	s	INDUCTOR, CHIP 56uH
Q1	8-729-216-22	s	TRANSISTOR 2SA1162
Q2	8-729-901-01	s	TRANSISTOR DTC144EK
Q3	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q4	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q5	8-729-901-01	s	TRANSISTOR DTC144EK
R1	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R2	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R3	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R4	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R5	1-216-295-00	s	METAL, CHIP 0-OHM
R6	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R7	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R8	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R9	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R10	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R11	1-216-295-00	s	METAL, CHIP 0-OHM
R12	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

HN-160 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-251-12	o	PRINTED CIRCUIT BOARD, HN-160
CN651	1-506-481-11	s	CONNECTOR, 2P, MALE
CN652	1-506-481-11	s	CONNECTOR, 2P, MALE
CN653	1-506-481-11	s	CONNECTOR, 2P, MALE
CN654	1-506-481-11	s	CONNECTOR, 2P, MALE
CN655	1-506-484-11	s	CONNECTOR, 5P, MALE
CN656	1-506-482-11	s	CONNECTOR, 3P, MALE
CN657	1-506-484-11	s	CONNECTOR, 5P, MALE
CN658	1-506-487-11	s	CONNECTOR, 8P, MALE
CN659	1-506-481-11	s	CONNECTOR, 2P, MALE

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

HN-182 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-644-091-11	o	PRINTED CIRCUIT BOARD, HN-182
CN720	1-562-887-11	s	CONNECTOR, FPC 20P
CN730	1-506-491-11	s	CONNECTOR, 12P, MALE
CN731	1-506-483-21	s	CONNECTOR, 4P, MALE

HP-56 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-644-089-11	o	PRINTED CIRCUIT BOARD, HP-56
C1	1-161-379-00	s	CERAMIC 0.01uF 20% 25V
CN651	1-506-468-11	s	CONNECTOR, 3P, MALE
CN6001	1-507-854-00	s	JACK, PHONE
R1	1-249-397-11	s	CARBON 22 5% 1/4W
R2	1-249-397-11	s	CARBON 22 5% 1/4W
RV1	1-237-703-11	s	RES, VAR CARBON 2K/2K

KY-229C BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-523-A	o	MOUNTED CIRCUIT BOARD, KY-229C
C101	1-126-786-11	s	ELECT 47uF 20% 16V
C102	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C103	1-126-786-11	s	ELECT 47uF 20% 16V
C104	1-126-786-11	s	ELECT 47uF 20% 16V
C105	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C106	1-163-133-00	s	CERAMIC, CHIP 470PF 5% 50V
C107	1-163-011-11	s	CERAMIC, CHIP 0.0015uF 10% 50V
C108	1-126-941-11	s	ELECT 470uF 20% 25V
C108 *1	1-126-935-11	s	ELECT 470uF 20% 16V
C109	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C110	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C111	1-126-923-11	s	ELECT 220uF 20% 10V
C112	1-126-923-11	s	ELECT 220uF 20% 10V
C113	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C114	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C115	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C116	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C117	1-163-001-11	s	CERAMIC, CHIP 220pF 10% 50V
C118	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C119	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
CN151	1-564-019-31	o	CONNECTOR, 9P, MALE
CN152	1-506-468-11	s	CONNECTOR, 3P, MALE
CN153	1-506-486-11	s	CONNECTOR, 7P, MALE
CN154	1-506-471-11	s	CONNECTOR, 6P, MALE
CN155	1-506-492-11	o	CONNECTOR, 13P, MALE
CN156	1-506-487-11	s	CONNECTOR, 8P, MALE
CN157	1-506-485-11	s	CONNECTOR, 6P, MALE
CN158	1-506-482-11	s	CONNECTOR, 3P, MALE
D101	8-719-400-18	s	DIODE MA152WK
D102	8-719-400-18	s	DIODE MA152WK
D103	8-719-400-18	s	DIODE MA152WK
D104	8-719-400-18	s	DIODE MA152WK
D108	8-719-400-18	s	DIODE MA152WK
D109	8-719-400-18	s	DIODE MA152WK
D111	8-719-400-18	s	DIODE MA152WK
D112	8-719-400-18	s	DIODE MA152WK
D116	8-719-400-18	s	DIODE MA152WK
D117	8-719-400-18	s	DIODE MA152WK
D119	8-719-400-18	s	DIODE MA152WK
D120	8-719-400-18	s	DIODE MA152WK
D123	8-719-400-18	s	DIODE MA152WK
D124	8-719-400-18	s	DIODE MA152WK
D125	8-719-400-18	s	DIODE MA152WK
D128	8-719-400-18	s	DIODE MA152WK
D133	8-719-800-76	s	DIODE 1SS226
D134	8-719-939-39	s	LED GL5HD8, RED
D135	8-719-939-39	s	LED GL5HD8, RED
D137	8-719-939-39	s	LED GL5HD8, RED
D138	8-719-939-39	s	LED GL5HD8, RED
D139	8-719-802-11	s	LED TLUG154, GRN
D141	8-719-400-18	s	DIODE MA152WK
IC101	8-759-085-45	s	IC MC68HC05C4BSC412077B
IC101 *1	8-759-070-50	s	IC 68HC05C4B-SC403089B
IC102	8-759-207-07	s	IC TD62381P
IC103	8-759-000-43	s	IC MC14042BCP
L101	1-421-459-00	s	COIL, CHOKE 5.6uH

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(KY-229C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q101	8-729-100-66	s	TRANSISTOR 2SC1623
Q102	8-729-904-54	s	TRANSISTOR DTB143EK
Q103	8-729-904-54	s	TRANSISTOR DTB143EK
Q104	8-729-904-54	s	TRANSISTOR DTB143EK
Q105	8-729-904-54	s	TRANSISTOR DTB143EK
Q106	8-729-904-54	s	TRANSISTOR DTB143EK
Q107	8-729-904-54	s	TRANSISTOR DTB143EK
Q108	8-729-904-54	s	TRANSISTOR DTB143EK
Q109	8-729-904-54	s	TRANSISTOR DTB143EK
Q110	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q111	8-729-904-54	s	TRANSISTOR DTB143EK
Q112	8-729-904-54	s	TRANSISTOR DTB143EK
Q113	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q114	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q115	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q116	8-729-904-87	s	TRANSISTOR 2SB1197K-R
Q117	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-901-06	s	TRANSISTOR DTA144EK
Q119	8-729-901-01	s	TRANSISTOR DTC144EK
Q120	8-729-901-06	s	TRANSISTOR DTA144EK
Q121	8-729-901-01	s	TRANSISTOR DTC144EK
Q122	8-729-901-06	s	TRANSISTOR DTA144EK
Q123	8-729-901-01	s	TRANSISTOR DTC144EK
Q124	8-729-901-06	s	TRANSISTOR DTA144EK
Q125	8-729-921-73	s	TRANSISTOR 2SD1781K-QR
Q126	8-729-921-73	s	TRANSISTOR 2SD1781K-QR
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R103	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R104	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R105	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R106	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R107	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R108	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R109	1-260-087-81	s	CARBON 100 5% 1/2W
R110	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R111	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R112	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R113	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R114	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R115	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R116	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R117	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R118	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R119	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R120	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R121	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R122	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R123	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R124	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R125	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R126	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R127	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R128	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R129	1-216-023-00	s	METAL, CHIP 82 5% 1/10W
R130	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R131	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W

(KY-229C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R133	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R134	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R135	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R136	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R137	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R138	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R139	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R141	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R142	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R143	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R145	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R146	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R147	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R148	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R149	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R150	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R151	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R152	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R153	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R154	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R155	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R157	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R158	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R159	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R160	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R161	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R162	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R163	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R164	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R165	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R166	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R167	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R168	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R169	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R170	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
S101	1-552-539-00	s	SWITCH, TACTILE
S102	1-570-472-11	s	SWITCH, PUSH
S103	1-570-472-11	s	SWITCH, PUSH
S104	1-516-995-00	s	SWITCH, LEVER SLIDE
S107	1-552-539-00	s	SWITCH, TACTILE
S109	1-570-472-11	s	SWITCH, PUSH
S110	1-570-472-11	s	SWITCH, PUSH
S111	1-552-539-00	s	SWITCH, TACTILE
S113	1-552-539-00	s	SWITCH, TACTILE
S114	1-552-539-00	s	SWITCH, TACTILE
S115	1-552-539-00	s	SWITCH, TACTILE
S117	1-552-539-00	s	SWITCH, TACTILE
X101	1-567-192-11	s	RESONATOR, CERAMIC 4MHz

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

LD-35 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
CN620	1-506-481-11	s	CONNECTOR, 2P, MALE

LE-80 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-247-11	o	PRINTED CIRCUIT BOARD, LE-80
1pc	3-167-028-02	o	HOLDER, LED
D1	8-719-985-00	s	DIODE GL451VS1

LE-86 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-250-11	o	PRINTED CIRCUIT BOARD, LE-86
D1	8-719-821-22	s	LED TL022, ORG

NR-40A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-530-A	o	MOUNTED CIRCUIT BOARD, NR-40A
1pc	3-168-157-01	o	BRACKET (R), VO BOARD
1pc	3-168-158-01	o	BRACKET (L), VO BOARD
1pc	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3x6
C101	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C102	1-126-947-11	s	ELECT 47uF 20% 35V
C103	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C104	1-126-947-11	s	ELECT 47uF 20% 35V
C106	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C107	1-163-120-00	s	CERAMIC, CHIP 130pF 5% 50V
C108	1-163-120-00	s	CERAMIC, CHIP 130pF 5% 50V
C109	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C110	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C111	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C112	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C113	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C114	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C115	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C116	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C117	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C118	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C119	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C120	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C121	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C122	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C123	1-124-925-11	s	ELECT 2.2uF 20% 100V
C124	1-164-343-11	s	CERAMIC, CHIP 0.056uF 10% 25V
C125	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C126	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C127	1-126-947-11	s	ELECT 47uF 20% 35V
C128	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C129	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C130	1-164-182-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C131	1-163-063-00	s	CERAMIC, CHIP 0.022uF 10% 50V
C132	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C133	1-163-063-00	s	CERAMIC, CHIP 0.022uF 10% 50V
C134	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C135	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C136	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C137	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C138	1-163-224-11	s	CERAMIC, CHIP 7pF 50V
C139	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C140	1-163-120-00	s	CERAMIC, CHIP 130pF 5% 50V
C142	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C143	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C144	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C145	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C150	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C201	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C202	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C203	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C204	1-123-382-00	s	ELECT 3.3uF 20% 100V
C205	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C206	1-123-382-00	s	ELECT 3.3uF 20% 100V
C207	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C208	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C209	1-123-382-00	s	ELECT 3.3uF 20% 100V
C210	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C211	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C212	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C213	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C214	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C215	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C216	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C217	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C218	1-163-110-00	s	CERAMIC, CHIP 51pF 5% 50V
C219	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C220	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C221	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C222	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C223	1-126-947-11	s	ELECT 47uF 20% 35V
C224	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C225	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C227	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C228	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C229	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C230	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C231	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C232	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C233	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C234	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C236	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C237	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C238	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C239	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C240	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C241	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C242	1-163-091-00	s	CERAMIC, CHIP 8pF 50V
C243	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C244	1-163-217-11	s	CERAMIC, CHIP 1pF 50V
C245	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C246	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C247	1-126-947-11	s	ELECT 47uF 20% 35V
C248	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C301	1-126-947-11	s	ELECT 47uF 20% 35V
C302	1-126-947-11	s	ELECT 47uF 20% 35V
C303	1-126-947-11	s	ELECT 47uF 20% 35V
C304	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C305	1-126-933-11	s	ELECT 100uF 20% 16V
C306	1-126-933-11	s	ELECT 100uF 20% 16V
C307	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C308	1-126-933-11	s	ELECT 100uF 20% 16V
C309	1-126-947-11	s	ELECT 47uF 20% 35V
C310	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C312	1-126-947-11	s	ELECT 47uF 20% 35V
C313	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C314	1-126-935-11	s	ELECT 470uF 20% 16V
C315	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C317	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C319	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C320	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C321	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C322	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C323	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C324	1-126-947-11	s	ELECT 47uF 20% 35V
C326	1-126-947-11	s	ELECT 47uF 20% 35V
C329	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C330	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C331	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C333	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C334	1-126-157-11	s	ELECT 10uF 20% 16V
C335	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C336	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C337	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C338	1-126-947-11	s	ELECT 47uF 20% 35V
C339	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C340	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C341	1-163-134-00	s	CERAMIC, CHIP 510pF 5% 50V
C342	1-126-933-11	s	ELECT 100uF 20% 16V
C343	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C344	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C345	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C346	1-123-382-00	s	ELECT 3.3uF 20% 100V
C347	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C348	1-126-947-11	s	ELECT 47uF 20% 35V
CN101	1-506-474-11	s	CONNECTOR, 9P, MALE
CN102	1-506-477-11	s	CONNECTOR, 12P, MALE
CN103	1-506-470-11	s	CONNECTOR, 5P, MALE
CN201	1-506-473-11	s	CONNECTOR, 8P, MALE
CN213	1-506-468-11	s	CONNECTOR, 3P, MALE
CN301	1-506-469-11	s	CONNECTOR, 4P, MALE
CN302	1-506-470-11	s	CONNECTOR, 5P, MALE
D101	8-719-104-34	s	DIODE 1S2836
D102	8-719-800-76	s	DIODE 1SS226
D103	8-719-400-18	s	DIODE MA152WK
D104	8-719-400-18	s	DIODE MA152WK
D106	8-719-400-18	s	DIODE MA152WK
D107	8-719-400-18	s	DIODE MA152WK
D108	8-719-400-18	s	DIODE MA152WK
D109	8-719-400-18	s	DIODE MA152WK
D110	8-719-400-18	s	DIODE MA152WK
D111	8-719-400-18	s	DIODE MA152WK
D201	8-719-104-10	s	DIODE 1SS99
D202	8-719-104-10	s	DIODE 1SS99
D203	8-719-104-10	s	DIODE 1SS99
D204	8-719-104-10	s	DIODE 1SS99
D205	8-719-105-28	s	DIODE RD2.4M-B
D206	8-719-157-36	s	DIODE RD6.8M-B
D301	8-719-104-10	s	DIODE 1SS99
D302	8-719-104-10	s	DIODE 1SS99
D303	8-719-104-10	s	DIODE 1SS99
D304	8-719-104-10	s	DIODE 1SS99
D305	8-719-104-10	s	DIODE 1SS99
D306	8-719-104-10	s	DIODE 1SS99
D307	8-719-104-10	s	DIODE 1SS99
D308	8-719-104-10	s	DIODE 1SS99
D309	8-719-400-18	s	DIODE MA152WK
D310	8-719-106-43	s	DIODE RD9.1M-B1
D311	8-719-105-82	s	DIODE RD5.1M-B2
D312	8-719-105-57	s	DIODE RD3.9M-B1
IC101	8-759-710-07	s	IC NJM2234M
IC102	8-759-710-86	s	IC NJM2233BM
IC103	8-759-969-13	s	IC SN16913P
IC104	8-759-908-17	s	IC TL082CPS
IC105	8-759-008-82	s	IC MC14013BF

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC106	8-759-009-51	s	IC MC14538BF
IC107	8-759-710-07	s	IC NJM2234M
IC108	8-759-008-98	s	IC MC14040BF
IC109	8-759-708-05	s	IC NJM78L05A
IC110	8-759-008-79	s	IC MC14011BF
IC111	8-759-008-74	s	IC MC14001BF
IC201	8-752-333-24	s	IC CXL1506M
IC202	8-759-710-86	s	IC NJM2233BM
IC203	8-759-925-60	s	IC BA401
IC301	8-759-710-07	s	IC NJM2234M
IC302	8-759-925-60	s	IC BA401
IC304	8-759-710-07	s	IC NJM2234M
IC305	8-759-925-60	s	IC BA401
IC306	8-759-201-47	s	IC TA7357AP
IC307	8-759-711-41	s	IC NJM2220S
L101	1-410-473-11	s	INDUCTOR 18uH
L102	1-410-473-11	s	INDUCTOR 18uH
L103	1-410-473-11	s	INDUCTOR 18uH
L104	1-410-482-31	s	INDUCTOR 100uH
L105	1-410-473-11	s	INDUCTOR 18uH
L201	1-410-470-11	s	INDUCTOR 10uH
L202	1-410-478-11	s	INDUCTOR 47uH
L203	1-408-414-00	s	INDUCTOR 27uH
L204	1-408-413-00	s	INDUCTOR 22uH
L205	1-410-482-31	s	INDUCTOR 100uH
L206	1-408-416-00	s	INDUCTOR 39uH
L207	1-408-397-00	s	INDUCTOR 1uH
L209	1-410-470-11	s	INDUCTOR 10uH
L301	1-410-470-11	s	INDUCTOR 10uH
L302	1-410-482-31	s	INDUCTOR 100uH
L303	1-410-470-11	s	INDUCTOR 10uH
Q101	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q102	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q103	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q104	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q105	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q106	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q107	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q108	8-729-901-01	s	TRANSISTOR DTC144EK
Q109	8-729-903-10	s	TRANSISTOR FMW1
Q110	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q111	8-729-216-22	s	TRANSISTOR 2SA1162
Q112	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q114	8-729-216-22	s	TRANSISTOR 2SA1162
Q115	8-729-216-22	s	TRANSISTOR 2SA1162
Q117	8-729-901-01	s	TRANSISTOR DTC144EK
Q118	8-729-216-22	s	TRANSISTOR 2SA1162
Q123	8-729-901-01	s	TRANSISTOR DTC144EK
Q124	8-729-901-04	s	TRANSISTOR DTA114EK
Q131	8-729-901-01	s	TRANSISTOR DTC144EK
Q132	8-729-901-01	s	TRANSISTOR DTC144EK
Q133	8-729-901-01	s	TRANSISTOR DTC144EK
Q134	8-729-901-01	s	TRANSISTOR DTC144EK
Q135	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q136	8-729-901-01	s	TRANSISTOR DTC144EK
Q137	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q138	8-729-901-01	s	TRANSISTOR DTC144EK
Q139	8-729-230-49	s	TRANSISTOR 2SC2712YG

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q140	8-729-901-01	s	TRANSISTOR DTC144EK
Q141	8-729-901-01	s	TRANSISTOR DTC144EK
Q142	8-729-901-01	s	TRANSISTOR DTC144EK
Q143	8-729-901-01	s	TRANSISTOR DTC144EK
Q144	8-729-901-01	s	TRANSISTOR DTC144EK
Q201	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q202	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q203	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q204	8-729-901-01	s	TRANSISTOR DTC144EK
Q206	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q207	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q208	8-729-216-22	s	TRANSISTOR 2SA1162
Q209	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q210	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q215	8-729-903-97	s	TRANSISTOR FMS1FE
Q216	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q217	8-729-216-22	s	TRANSISTOR 2SA1162
Q218	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q219	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q220	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q221	8-729-901-01	s	TRANSISTOR DTC144EK
Q222	8-729-202-38	s	TRANSISTOR 2SC3326N
Q223	8-729-202-38	s	TRANSISTOR 2SC3326N
Q224	8-729-202-38	s	TRANSISTOR 2SC3326N
Q225	8-729-216-22	s	TRANSISTOR 2SA1162
Q226	8-729-216-22	s	TRANSISTOR 2SA1162
Q301	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q302	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q303	8-729-903-97	s	TRANSISTOR FMS1FE
Q304	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q305	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q306	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q307	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q308	8-729-903-97	s	TRANSISTOR FMS1FE
Q309	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q310	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q311	8-729-901-04	s	TRANSISTOR DTA114EK
Q312	8-729-901-01	s	TRANSISTOR DTC144EK
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q315	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q318	8-729-901-01	s	TRANSISTOR DTC144EK
Q319	8-729-901-01	s	TRANSISTOR DTC144EK
Q320	8-729-216-22	s	TRANSISTOR 2SA1162
Q321	8-729-216-22	s	TRANSISTOR 2SA1162
R103	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R104	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R105	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R107	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R108	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R109	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R110	1-216-632-11	s	METAL, CHIP 160 0.5% 1/10W
R111	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R113	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R114	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R115	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R116	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R117	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R118	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R119	1-218-765-11	s	METAL 360K 0.50% 1/10W
R120	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R121	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R122	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R123	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R124	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R125	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R126	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R127	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R128	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R129	1-218-756-11	s	METAL 150K 0.50% 1/10W
R130	1-216-695-11	s	METAL, CHIP 68K 0.5% 1/10W
R131	1-216-696-11	s	METAL, CHIP 75K 0.5% 1/10W
R132	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R133	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R134	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R135	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R136	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R137	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R138	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R139	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R140	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R142	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R144	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R145	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R146	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R149	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R150	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R152	1-216-295-00	s	METAL, CHIP 0-OHM
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R158	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R159	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R160	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R161	1-216-675-11	s	METAL, CHIP 10K 0.5% 1/10W
R162	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R163	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R178	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R183	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R184	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R185	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R186	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R187	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R188	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R189	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R190	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R191	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R192	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R193	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R194	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R195	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R195 *1	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R196	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R197	1-249-429-11	s	CARBON 10K 5% 1/4W
R197 *1	NOT IN USE.		
R201	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R202	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R203	1-216-041-00	s	METAL, CHIP 470 5% 1/10W

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R204	1-216-641-11	s	METAL, CHIP 390 0.5% 1/10W
R205	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R206	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R207	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R208	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R209	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R211	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R212	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R214	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R215	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R216	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R217	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R218	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R219	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R220	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R221	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R222	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R223	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R224	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R225	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R226	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R227	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R228	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R234	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R235	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R236	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R237	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R238	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R239	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R240	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R241	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R242	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W
R243	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R244	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R245	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R246	1-216-642-11	s	METAL, CHIP 430 0.5% 1/10W
R247	1-216-644-11	s	METAL, CHIP 510 0.5% 1/10W
R248	1-216-007-00	s	METAL, CHIP 18 5% 1/10W
R249	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R250	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R251	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R254	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R255	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R256	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R257	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R258	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R259	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R261	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R262	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R263	1-216-013-00	s	METAL, CHIP 33 5% 1/10W
R264	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R265	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R266	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R267	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R268	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R269	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R270	1-216-041-00	s	METAL, CHIP 470 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R271	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R301	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R302	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R303	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R304	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R305	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R306	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R307	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R308	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R309	1-216-015-00	s	METAL 39 5% 1/10W
R310	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R311	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R312	1-216-671-11	s	METAL, CHIP 6.8K 0.5% 1/10W
R313	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R314	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R315	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R316	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R317	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R318	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R319	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R322	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R323	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R324	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R326	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R327	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R328	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R330	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R331	1-216-653-11	s	METAL, CHIP 1.2K 0.5% 1/10W
R332	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R333	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R334	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R335	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R336	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R337	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R339	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R340	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R341	1-216-017-00	s	METAL, CHIP 47 5% 1/10W
R343	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R344	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R346	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R347	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R348	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R349	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R350	1-216-618-11	s	METAL, CHIP 43 0.5% 1/10W
R351	1-216-618-11	s	METAL, CHIP 43 0.5% 1/10W
R352	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R353	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R354	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R355	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R356	1-216-100-00	s	METAL, CHIP 130K 0.5% 1/10W
R357	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R358	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R359	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R360	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R361	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R363	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R365	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R367	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R368	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

(NR-40A BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R369	1-216-688-11	s	METAL, CHIP 36K 0.5% 1/10W
R370	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R371	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R372	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R373	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R782	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
RV101	1-238-013-11	s	RES, ADJ CARBON 2.2K
RV102	1-238-013-11	s	RES, ADJ CARBON 2.2K
RV103	1-238-015-11	s	RES, ADJ CARBON 4.7K
RV202	1-238-011-11	s	RES, ADJ CARBON 470
RV203	1-238-011-11	s	RES, ADJ CARBON 470
RV204	1-238-011-11	s	RES, ADJ CARBON 470
S1	1-553-510-00	s	SWITCH, SLIDE
TH201	1-808-269-11	s	THERMISTOR
TH202	1-808-269-11	s	THERMISTOR

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

RP-62E BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-525-A	o	MOUNTED CIRCUIT BOARD, RP-62E
1pc	3-173-468-01	o	SHEET, INSULATING, RP
1pc	3-173-491-02	o	SHIELD (A), RP
1pc	3-173-492-01	o	SHIELD (B), RP
C3	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C4	1-124-589-11	s	ELECT 47uF 20% 16V
C5	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C002	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C201	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C203	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C204	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C205	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C207	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C209	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C210	1-162-638-11	s	CERAMIC, CHIP 1uF 16V
C211	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C213	1-164-346-11	s	CERAMIC, CHIP 1uF 16V
C214	1-126-153-11	s	ELECT 22uF 20% 6.3V
C216	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C217	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C218	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C219	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C220	1-163-253-11	s	CERAMIC, CHIP 120pF 5% 50V
C221	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C222	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C223	1-164-161-11	s	CERAMIC, CHIP 0.0022uF 10% 100V
C224	1-126-153-11	s	ELECT 22uF 20% 6.3V
C225	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C230	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C231	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C232	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C233	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C234	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C236	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C237	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C238	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C239	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C240	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C241	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C242	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C243	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C244	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C245	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C246	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C247	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C248	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C249	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C250	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C251	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C252	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C253	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C254	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C255	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C256	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C257	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C258	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C259	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C260	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V

(RP-62E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C261	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C262	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C263	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C264	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C265	1-124-589-11	s	ELECT 47uF 20% 16V
C266	1-163-085-00	s	CERAMIC, CHIP 2pF 50V
C267	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C270	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C272	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C273	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C274	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C274 *5	1-162-207-31	s	CERAMIC 22pF 5% 50V
C275	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C275 *5	1-162-207-31	s	CERAMIC 22pF 5% 50V
C319	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C324	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C325	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C326	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C327	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C328	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C329	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C330	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C331	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C332	1-126-160-11	s	ELECT 1uF 20% 50V
C333	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C334	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C335	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C339	1-126-157-11	s	ELECT 10uF 20% 16V
C340	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C350	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C351	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C353	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C354	1-126-163-11	s	ELECT 4.7uF 20% 50V
C355	1-124-589-11	s	ELECT 47uF 20% 16V
CN801	1-563-590-11	o	CONNECTOR, FPC 13P, FEMALE
CN802	1-506-486-11	s	CONNECTOR, 7P, MALE
CN803	1-506-485-11	s	CONNECTOR, 6P, MALE
CN804	1-564-031-00	o	CONNECTOR, 6P, MALE
CN805	1-506-485-11	s	CONNECTOR, 6P, MALE
CN806	1-506-484-11	s	CONNECTOR, 5P, MALE
CN807	1-506-485-11	s	CONNECTOR, 6P, MALE
CN808	1-506-482-11	s	CONNECTOR, 3P, MALE
D201	8-719-400-18	s	DIODE MA152WK
D203	8-719-400-18	s	DIODE MA152WK
D301	8-719-400-18	s	DIODE MA152WK
DL201	1-415-858-11	s	DELAY LINE 35ns
DL202	1-415-858-11	s	DELAY LINE 35ns
IC201	8-759-320-52	s	IC HA118019NT
IC202	8-759-012-00	s	IC MC10H116M
IC301	8-759-320-55	s	IC HA12115MP
IC302	8-759-998-32	s	IC CXD2107M
L200	1-407-169-99	s	INDUCTOR 100uH
L201	1-408-948-00	s	INDUCTOR 220uH
L202	1-408-976-21	s	INDUCTOR 33uH
L203	1-408-971-21	s	INDUCTOR 12uH
L204	1-408-977-21	s	INDUCTOR 39uH

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(RP-62E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L205	1-408-948-00	s	INDUCTOR 220uH
L206	1-408-970-21	s	INDUCTOR 10uH
L207	1-408-978-21	s	INDUCTOR 47uH
L208	1-408-973-21	s	INDUCTOR 18uH
L209	1-408-978-21	s	INDUCTOR 47uH
L210	1-407-169-99	s	INDUCTOR 100uH
L211	1-407-169-99	s	INDUCTOR 100uH
L212	1-408-974-21	s	INDUCTOR 22uH
L213	1-407-169-99	s	INDUCTOR 100uH
L214	1-408-972-21	s	INDUCTOR 15uH
L215	1-408-970-21	s	INDUCTOR 10uH
L303	1-407-169-99	s	INDUCTOR 100uH
L304	1-407-169-99	s	INDUCTOR 100uH
L305	1-407-169-99	s	INDUCTOR 100uH
Q210	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q211	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q212	8-729-216-22	s	TRANSISTOR 2SA1162
Q213	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q214	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q215	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q216	8-729-216-22	s	TRANSISTOR 2SA1162
Q217	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q218	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q219	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q220	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q221	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q222	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q223	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q310	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q311	8-729-216-22	s	TRANSISTOR 2SA1162
Q312	8-729-901-01	s	TRANSISTOR DTC144EK
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-901-06	s	TRANSISTOR DTA144EK
Q315	8-729-901-01	s	TRANSISTOR DTC144EK
R119	1-216-295-00	s	METAL, CHIP 0-OHM
R201	1-216-632-11	s	METAL, CHIP 160 0.5% 1/10W
R202	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R203	1-216-630-11	s	METAL, CHIP 130 0.5% 1/10W
R204	1-216-629-11	s	METAL, CHIP 120 0.5% 1/10W
R204 *5	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R205	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R206	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R207	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R208	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R209	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R210	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R211	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R212	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R213	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R214	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R218	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R219	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R220	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R221	1-216-295-00	s	METAL, CHIP 0-OHM
R222	DELETED.		
R222 *5	1-216-295-00	s	METAL, CHIP 0-OHM
R230	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R231	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R232	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

(RP-62E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R233	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R234	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R236	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R237	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R238	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R239	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R240	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R241	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R244	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R245	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R246	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R247	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R248	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R249	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R250	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R251	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R252	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R253	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R254	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R255	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R256	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R257	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R258	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R259	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R260	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R261	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R262	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R263	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R264	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R265	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R266	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R267	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R267 *5	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R268	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R269	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R272	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R273	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R274	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R275	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R276	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R278	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R279	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R280	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R281	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R282	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R283	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R284	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R285	1-216-636-11	s	METAL, CHIP 240 0.5% 1/10W
R286	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R287	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R288	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R289	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R290	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R291	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R292	1-216-661-11	s	METAL, CHIP 2.7K 0.5% 1/10W

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(RP-62E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R293	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R294	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W
R294 *5	NOT IN USE.		
R322	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R341	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R342	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R343	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R344	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R346	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
RV201	DELETED.		
RV201 *5	1-241-136-11	s	RES, ADJ CARBON 10K

SE-151 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-245-13	o	PRINTED CIRCUIT BOARD, SE-151
1pc	3-167-013-02	o	HOLDER, ST SENSOR
CN610	1-506-467-11	s	CONNECTOR, 2P, MALE
Q1	8-729-926-31	s	PHOTO TRANSISTOR PT483F1S

SE-152 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-246-12	o	PRINTED CIRCUIT BOARD, SE-152
1pc	3-167-013-02	o	HOLDER, ST SENSOR
Q1	8-729-926-31	s	PHOTO TRANSISTOR PT483F1S

SE-159 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-637-249-11	o	PRINTED CIRCUIT BOARD, SE-159
1pc	1-806-232-21	s	DETECTOR, cds
1pc	3-167-036-01	o	HOLDER, DETECTOR

SS-49E BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-524-A	o	MOUNTED CIRCUIT BOARD, SS-49E
3pcs	3-682-057-11	s	SPACER (SMALL)
2pcs	4-924-098-31	o	HOLDER, PC BOARD
C101	1-126-933-11	s	ELECT 100uF 20% 16V
C102	1-126-935-11	s	ELECT 470uF 20% 16V
C103	1-125-498-11	s	DOUBLE LAYERS 1.0 FARAD 5.5V
C104	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C105	1-124-234-00	s	ELECT 22uF 20% 16V
C106	1-126-933-11	s	ELECT 100uF 20% 16V
C107	1-126-157-11	s	ELECT 10uF 20% 16V
C108	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C109	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C110	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C111	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C113	1-124-589-11	s	ELECT 47uF 20% 16V
C115	1-124-589-11	s	ELECT 47uF 20% 16V
C118	1-124-234-00	s	ELECT 22uF 20% 16V
C119	1-124-257-00	s	ELECT 2.2uF 20% 50V
C120	1-163-141-00	s	CERAMIC, CHIP 0.001uF 5% 50V
C121	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C122	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C123	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C124	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C125	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C129	1-130-483-00	s	MYLAR 0.01uF 5% 50V
C130	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C139	1-124-589-11	s	ELECT 47uF 20% 16V
C140	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C141	1-161-021-11	s	CERAMIC 0.047uF 10% 25V
C142	1-124-589-11	s	ELECT 47uF 20% 16V
C143	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C144	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C146	1-124-589-11	s	ELECT 47uF 20% 16V
C147	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C148	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C149	1-126-157-11	s	ELECT 10uF 20% 16V
C150	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C157	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C158	1-124-234-00	s	ELECT 22uF 20% 16V
C159	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C160	1-124-589-11	s	ELECT 47uF 20% 16V
C164	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C165	1-126-162-11	s	ELECT 3.3uF 20% 50V
C166	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C167	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C168	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C169	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C170	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C171	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C178	1-124-234-00	s	ELECT 22uF 20% 16V
C179	1-124-465-00	s	ELECT 0.47uF 20% 50V
C180	1-126-163-11	s	ELECT 4.7uF 20% 50V
C301	1-124-589-11	s	ELECT 47uF 20% 16V
C302	1-126-162-11	s	ELECT 3.3uF 20% 50V
C303	1-126-162-11	s	ELECT 3.3uF 20% 50V
C304	1-126-157-11	s	ELECT 10uF 20% 16V
C305	1-126-157-11	s	ELECT 10uF 20% 16V
C306	1-126-162-11	s	ELECT 3.3uF 20% 50V

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(SS-49E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C307	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C308	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-589-11	s	ELECT 47uF 20% 16V
C310	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C311	1-124-242-00	s	ELECT 33uF 20% 25V
C312	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C313	1-124-242-00	s	ELECT 33uF 20% 25V
C314	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C315	1-124-242-00	s	ELECT 33uF 20% 25V
C316	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C317	1-124-242-00	s	ELECT 33uF 20% 25V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C322	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C322 *3	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C323	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C324	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C325	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C325 *4	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C326	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C327	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C328	1-126-933-11	s	ELECT 100uF 20% 16V
C329	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C330	1-126-934-11	s	ELECT 220uF 20% 16V
C331	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C331 *4	1-130-495-00	s	MYLAR 0.1uF 5% 50V
C332	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C333	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C334	1-126-933-11	s	ELECT 100uF 20% 16V
C335	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C336	1-126-934-11	s	ELECT 220uF 20% 16V
C337	1-126-768-11	s	ELECT 2200uF 20% 16V
C338	1-124-589-11	s	ELECT 47uF 20% 16V
C339	1-124-465-00	s	ELECT 0.47uF 20% 50V
C340	1-124-465-00	s	ELECT 0.47uF 20% 50V
C341	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C342	1-163-104-00	s	CERAMIC, CHIP 30pF 5% 50V
C343	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C344	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C345	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C346	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C347	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C348	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C349	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C351	1-124-465-00	s	ELECT 0.47uF 20% 50V
C352	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C353	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C354	1-126-160-11	s	ELECT 1uF 20% 50V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C363	1-126-933-11	s	ELECT 100uF 20% 16V
C364	1-126-933-11	s	ELECT 100uF 20% 16V
C365	1-126-933-11	s	ELECT 100uF 20% 16V
C366	1-126-933-11	s	ELECT 100uF 20% 16V
C367	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C515	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C516	1-130-471-00	s	MYLAR 0.001uF 5% 50V
C518	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C519	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C520	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

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Ref. No. or Q'ty	Part No.	SP	Description
C521	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C522	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C523	1-124-589-11	s	ELECT 47uF 20% 16V
C524	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C525	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C526	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C527	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C528	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C529	1-126-933-11	s	ELECT 100uF 20% 16V
C530	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C536	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C539	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C540	1-124-589-11	s	ELECT 47uF 20% 16V
C545	1-163-243-11	s	CERAMIC, CHIP 47pF 5% 50V
C546	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C547	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C548	1-126-516-11	s	ELECT 120uF 20% 16V
C601	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C602	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C603	1-126-160-11	s	ELECT 1uF 20% 50V
C604	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C605	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C606	1-126-933-11	s	ELECT 100uF 20% 16V
C607	1-126-163-11	s	ELECT 4.7uF 20% 50V
C670	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
CN2	1-566-967-11	s	CONNECTOR, 6P, MALE
CN3	1-506-548-11	o	CONNECTOR, 7P, MALE
CN100	1-560-899-00	o	CONNECTOR, 11P, MALE
CN101	1-563-461-11	o	CONNECTOR, FPC 28P
CN102	1-506-473-11	o	CONNECTOR, 8P, MALE
CN103	1-506-470-11	s	CONNECTOR, 5P, MALE
CN107	1-506-468-11	s	CONNECTOR, 3P, MALE
CN108	1-506-481-11	s	CONNECTOR, 2P, MALE
CN110	1-506-477-11	s	CONNECTOR, 12P, MALE
CN111	1-506-474-11	s	CONNECTOR, 9P, MALE
CN112	1-506-468-11	s	CONNECTOR, 3P, MALE
CN114	1-506-476-11	s	CONNECTOR, 11P, MALE
CN116	1-506-478-11	s	CONNECTOR, 13P, MALE
CN117	1-506-471-11	s	CONNECTOR, 6P, MALE
CN118	1-506-468-11	s	CONNECTOR, 3P, MALE
CN123	1-506-474-11	s	CONNECTOR, 9P, MALE
CN124	1-506-474-11	s	CONNECTOR, 9P, MALE
CN130	1-506-471-11	s	CONNECTOR, 6P, MALE
CN131	1-506-475-11	s	CONNECTOR, 10P, MALE
CN132	1-506-471-11	s	CONNECTOR, 6P, MALE
CN133	1-506-468-11	s	CONNECTOR, 3P, MALE
CN134	1-562-883-11	o	CONNECTOR, FPC 20P, FEMALE
CN140	1-506-472-11	s	CONNECTOR, 7P, MALE
CN142	1-506-478-11	s	CONNECTOR, 13P, MALE
D101	8-719-911-19	s	DIODE 1SS119
D102	8-719-104-34	s	DIODE 1S2836
D104	8-719-200-02	s	DIODE 10E2
D105	8-719-200-02	s	DIODE 10E2
D108	8-719-938-75	s	DIODE SB05-05CP
D112	8-719-109-68	s	DIODE RD3.6ES-B1
D113	8-719-104-34	s	DIODE 1S2836
D116	8-719-109-84	s	DIODE RD5.1ES-B1
D117	8-719-104-34	s	DIODE 1S2836
D119	8-719-911-19	s	DIODE 1SS119

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*5 SERIAL NO. 10001-10680

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Ref. No. or Q'ty	Part No.	SP	Description
D120	8-719-104-34	s	DIODE 1S2836
D120 *4	8-719-911-19	s	DIODE 1SS119
D301	8-719-800-76	s	DIODE 1SS226
D302	8-719-911-19	s	DIODE 1SS119
D303	8-719-106-16	s	DIODE RD6.8M-B1
D308	8-719-400-18	s	DIODE MA152WK
D310	8-719-106-43	s	DIODE RD9.1M-B1
D311	8-719-981-00	s	DIODE ERC81-004
D312	8-719-981-00	s	DIODE ERC81-004
D313	8-719-200-02	s	DIODE 10E2
D314	8-719-200-02	s	DIODE 10E2
D315	8-719-400-18	s	DIODE MA152WK
D316	8-719-106-16	s	DIODE RD6.8M-B1
D317	8-719-160-68	s	DIODE RD18F-B2
D318	8-719-160-68	s	DIODE RD18F-B2
D319	8-719-400-18	s	DIODE MA152WK
D320	8-719-911-19	s	DIODE 1SS119
D321	8-719-800-76	s	DIODE 1SS226
D326	8-719-110-16	s	DIODE RD10ES-B1
D327	8-719-200-02	s	DIODE 10E2
D328	8-719-200-02	s	DIODE 10E2
D329	8-719-200-02	s	DIODE 10E2
D505	8-719-104-34	s	DIODE 1S2836
D506	8-719-104-34	s	DIODE 1S2836
D508	8-719-104-34	s	DIODE 1S2836
D509	8-719-104-34	s	DIODE 1S2836
IC101	8-752-840-68	s	IC CXP80624-437Q
IC102	8-759-720-81	s	IC M6M80011AP
IC103	8-759-981-96	s	IC RC4560D
IC104	8-759-512-71	s	IC S-8054HNM
IC106	8-759-981-96	s	IC RC4560D
IC107	8-759-729-03	s	IC NJM2903D
IC108	8-759-135-80	s	IC UPC358C
IC109	8-759-983-45	s	IC BA6238A
IC111	8-759-140-53	s	IC UPD4053BC
IC113	8-759-711-41	s	IC NJM2220S
IC114	8-759-917-43	s	IC SN74HC138AN
IC115	8-759-202-61	s	IC MSM4094RS
IC116	8-759-512-71	s	IC S-8054HNM
IC117	8-743-915-10	s	IC BX3915A
IC301	8-759-912-77	s	IC LM324N
IC302	8-759-912-77	s	IC LM324N
IC303	8-759-140-53	s	IC UPD4053BC
IC304	8-759-984-03	s	IC LM339N
IC305	8-759-729-03	s	IC NJM2903D
IC306	8-759-091-41	s	IC UPD75108CW-W27
IC309	8-759-729-03	s	IC NJM2903D
IC310	8-759-135-80	s	IC UPC358C
IC311	8-759-912-77	s	IC LM324N
IC312	8-759-135-80	s	IC UPC358C
IC314	8-759-140-53	s	IC UPD4053BC
IC315	8-759-140-53	s	IC UPD4053BC
IC503	8-759-708-05	s	IC NJM78L05A
IC504	8-759-916-20	s	IC SN74HC14AN
IC505	8-759-981-96	s	IC RC4560D
IC506	8-759-040-70	s	IC MC14070BCP
IC508	8-759-340-13	s	IC HD14013BP
IC509	8-759-981-96	s	IC RC4560D

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Ref. No. or Q'ty	Part No.	SP	Description
IC510	8-759-140-53	s	IC UPD4053BC
IC512	8-759-140-53	s	IC UPD4053BC
IC513	8-759-729-03	s	IC NJM2903D
IC514	8-759-981-96	s	IC RC4560D
IC601	8-759-729-03	s	IC NJM2903D
L101	1-410-482-31	s	INDUCTOR 100uH
L102	1-410-675-31	s	INDUCTOR 120uH
L301	1-408-519-00	s	COIL, CHOKE 420uH
L302	1-408-519-00	s	COIL, CHOKE 420uH
PS101	⚠1-532-685-00	s	LINK, IC 0.8A
PS105	⚠1-532-637-00	s	LINK, IC 1.0A
PS301	⚠1-532-685-00	s	LINK, IC 0.8A
Q101	8-729-924-90	s	TRANSISTOR 2SB1370-EF
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-06	s	TRANSISTOR DTA144EK
Q104	8-729-216-22	s	TRANSISTOR 2SA1162
Q107	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q108	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q109	8-729-119-77	s	TRANSISTOR 2SA1175-FEK
Q110	8-729-216-22	s	TRANSISTOR 2SA1162
Q114	8-729-216-22	s	TRANSISTOR 2SA1162
Q115	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q116	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q117	8-729-901-00	s	TRANSISTOR DTC124EK
Q118	8-729-901-00	s	TRANSISTOR DTC124EK
Q119	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q120	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q122	8-729-901-01	s	TRANSISTOR DTC144EK
Q128	8-729-216-22	s	TRANSISTOR 2SA1162
Q129	8-729-216-22	s	TRANSISTOR 2SA1162
Q130	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q131	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q134	8-729-901-01	s	TRANSISTOR DTC144EK
Q301	8-729-901-01	s	TRANSISTOR DTC144EK
Q302	8-729-901-01	s	TRANSISTOR DTC144EK
Q303	8-729-901-01	s	TRANSISTOR DTC144EK
Q304	8-729-216-22	s	TRANSISTOR 2SA1162
Q305	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q306	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q307	8-729-216-22	s	TRANSISTOR 2SA1162
Q308	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q309	8-729-216-22	s	TRANSISTOR 2SA1162
Q310	8-729-804-87	s	TRANSISTOR 2SB1142-T
Q311	8-729-216-22	s	TRANSISTOR 2SA1162
Q312	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q313	8-729-216-22	s	TRANSISTOR 2SA1162
Q314	8-729-320-60	s	TRANSISTOR 2SD788-34
Q315	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q316	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q317	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q318	8-729-216-22	s	TRANSISTOR 2SA1162
Q319	8-729-320-60	s	TRANSISTOR 2SD788-34
Q320	8-729-901-01	s	TRANSISTOR DTC144EK
Q321	8-729-901-01	s	TRANSISTOR DTC144EK
Q322	8-729-901-01	s	TRANSISTOR DTC144EK
Q323	8-729-202-38	s	TRANSISTOR 2SC3326N
Q331	8-729-216-22	s	TRANSISTOR 2SA1162
Q332	8-729-901-01	s	TRANSISTOR DTC144EK

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Ref. No. or Q'ty	Part No.	SP	Description
Q333	8-729-901-01	s	TRANSISTOR DTC144EK
Q334	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q335	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q336	8-729-901-01	s	TRANSISTOR DTC144EK
Q337	8-729-216-22	s	TRANSISTOR 2SA1162
Q338	8-729-320-60	s	TRANSISTOR 2SD788-34
Q340	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q341	8-729-216-22	s	TRANSISTOR 2SA1162
Q342	8-729-320-60	s	TRANSISTOR 2SD788-34
Q346	8-729-889-40	s	TRANSISTOR 2SD894
Q347	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q348	8-729-811-11	s	TRANSISTOR 2SD1111
Q349	8-729-901-06	s	TRANSISTOR DTA144EK
Q350	8-729-901-01	s	TRANSISTOR DTC144EK
Q351	8-729-901-01	s	TRANSISTOR DTC144EK
Q352	8-729-900-52	s	TRANSISTOR DTC114YK
Q506	8-729-105-73	s	TRANSISTOR 2SK523-L2
Q507	8-729-901-01	s	TRANSISTOR DTC144EK
Q510	8-729-901-01	s	TRANSISTOR DTC144EK
Q516	8-729-901-01	s	TRANSISTOR DTC144EK
R101	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R102	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R103	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R104	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R105	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R106	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R107	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R108	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R109	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R110	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R111	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R112	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R114	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R115	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R116	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R119	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R120	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R121	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R123	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R124	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R125	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R126	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R127	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R128	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R129	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R130	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R131	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R132	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R133	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R134	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R135	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R136	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R137	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R138	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R139	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R140	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R141	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R142	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R143	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W

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Ref. No. or Q'ty	Part No.	SP	Description
R144	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R145	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R146	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R147	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R148	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R149	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R150	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R151	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R152	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R153	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R154	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R155	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R156	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R157	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R158	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R159	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R160	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R161	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R162	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R163	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R164	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R165	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R166	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R167	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R168	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R169	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R172	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R173	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R174	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R175	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R176	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R177	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R178	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R179	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R180	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R181	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R182	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R183	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R184	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R185	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R186	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R187	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R188	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R194	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R195	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R198	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R199	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R200	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R201	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R202	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R203	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R204	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R205	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R206	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(SS-49E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R208	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R209	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R210	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R211	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R212	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R213	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R214	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R215	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R217	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R218	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R219	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R220	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R221	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R222	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R223	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R224	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R226	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R227	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R228	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R229	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R230	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R231	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R232	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R233	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R234	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R235	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R236	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R237	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R238	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R239	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R240	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R241	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R242	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R243	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R247	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R248	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R250	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R251	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R256	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R268	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R269	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R270	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R271	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R272	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R273	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R274	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R275	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R276	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R277	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R278	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R280	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R281	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R282	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R283	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R284	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R285	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R289	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R290	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R291	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SEREAL NO. 10001-10230
*3 SEREAL NO. 10001-10380

(SS-49E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R292	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R293	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R296	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R298	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R299	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R301	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R302	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R303	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R304	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R305	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R306	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R307	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R309	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R310	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R311	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R312	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R313	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R314	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R315	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R316	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R317	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R318	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R320	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R321	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R322	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R324	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R325	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R328	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R329	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R330	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R332	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R333	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R334	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R336	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R337	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R338	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R341	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R345	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R346	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R349	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R350	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R351	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R352	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R353	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R354	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R355	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R356	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R357	1-216-109-00	s	METAL, CHIP 330K 5% 1/10W
R358	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R359	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R360	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R361	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R362	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R363	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R364	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R366	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(SS-49E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R367	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R368	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R370	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R371	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R372	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R373	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R375	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R376	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R377	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R378	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R379	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R380	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R381	⚠1-216-365-00	s	METAL 0.47 5% 2W
R383	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R384	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R385	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R387	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R388	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R389	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R390	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R392	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R393	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R394	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R395	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R396	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R397	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R398	⚠1-216-365-00	s	METAL 0.47 5% 2W
R399	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R400	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R401	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R402	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R403	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R404	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R405	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R406	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R407	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R408	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R409	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R410	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R411	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R412	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R413	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R414	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R415	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R416	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R417	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R418	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R419	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R420	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R421	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R422	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R423	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R424	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R425	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R426	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R427	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R428	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R429	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R430	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W

(SS-49E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R431	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R432	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R433	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R434	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R435	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R436	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R437	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R438	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R439	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R440	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R441	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R442	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R443	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R444	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R445	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R446	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R447	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R448	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R449	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R450	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R451	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R452	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R453	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R454	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R455	1-216-679-11	s	METAL, CHIP 15K 0.5% 1/10W
R456	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R457	1-216-686-11	s	METAL, CHIP 30K 0.5% 1/10W
R458	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R461	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R462	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R463	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R464	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R465	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R466	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R467	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R468	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R469	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R470	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R471	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R472	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R473	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R474	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R475	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R476	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R478	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R479	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R480	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R481	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R482	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R483	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R485	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R486	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R487	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R488	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R489	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(SS-49E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R491	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R494	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R497	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R498	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R499	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R531	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R532	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R533	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R535	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R536	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R537	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R538	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R539	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R540	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R541	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R542	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R543	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R544	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R546	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R548	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R549	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R550	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R551	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R552	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R553	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R554	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R555	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R556	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R557	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R558	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R559	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R560	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R561	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R562	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R563	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R568	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R569	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R570	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R571	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R572	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R573	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R574	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R575	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R576	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R577	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R578	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R600	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R601	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R602	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R603	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R604	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R605	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R606	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R607	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R609	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

(SS-49E BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R610	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R616	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R617	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R618	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R632	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R633	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R634	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R635	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R636	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R637	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R638	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R640	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R641	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R642	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R643	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R644	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R644 *1	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R645	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R646	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R647	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R648	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R650	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R651	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R652	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
RB101	1-235-196-00	s	RESISTOR BLOCK 100Kx8
RB301	1-235-195-00	s	RESISTOR BLOCK 10Kx8
RV101	1-238-020-11	s	RES, ADJ CARBON 100K
RV102	1-228-462-00	s	RES, ADJ METAL 100K
RV301	1-241-630-11	s	RES, ADJ CARBON 10K
RV302	1-241-630-11	s	RES, ADJ CARBON 10K
RV303	1-241-627-11	s	RES, ADJ CARBON 1K
RV304	1-241-627-11	s	RES, ADJ CARBON 1K
RV305	1-241-630-11	s	RES, ADJ CARBON 10K
RV500	1-241-630-11	s	RES, ADJ CARBON 10K
RV502	1-241-630-11	s	RES, ADJ CARBON 10K
RV503	1-241-630-11	s	RES, ADJ CARBON 10K
S101	1-570-623-11	s	SWITCH, DIP 8-CKT
X101	1-567-962-11	s	CRYSTAL 8MHz
X301	1-567-192-11	s	RESONATOR, CERAMIC 4MHz

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

SW-514C BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8276-367-A	o	MOUNTED CIRCUIT BOARD, SW-514C
CN602	1-506-486-11	s	CONNECTOR, 7P, MALE
CN603	1-506-483-21	s	CONNECTOR, 4P, MALE
S602	1-554-481-00	s	SWITCH, SLIDE
S606	1-554-481-00	s	SWITCH, SLIDE
S608	1-554-481-00	s	SWITCH, SLIDE
S609	1-554-481-00	s	SWITCH, SLIDE

SW-532A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-643-487-12	o	PRINTED CIRCUIT BOARD, SW-532
CN171	1-506-482-11	s	CONNECTOR, 3P, MALE
S105	1-516-961-00	s	SWITCH, LEVER SLIDE

SW-574 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-644-090-11	o	PRINTED CIRCUIT BOARD, SW-574
CN151	1-506-469-11	s	CONNECTOR, 4P, MALE
CN167	1-506-468-11	s	CONNECTOR, 3P, MALE
RV101	1-237-713-11	s	RES, VAR CARBON 100K
S151	1-516-961-00	s	SWITCH, LEVER SLIDE
S152	1-516-995-00	s	SWITCH, LEVER SLIDE

VO-37C BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8271-522-A	o	MOUNTEC CIRCUIT BOARD, VO-37C
1pc	3-173-464-01	o	SHIELD (A), VO BOARD
1pc	3-173-465-01	o	SHIELD (B), VO BOARD
1pc	3-659-918-01	o	HEAT SINK, TR
1pc	7-682-547-04	s	SCREW +B 3x6
1pc	3-168-157-01	o	BRACKET (R), VO BOARD
1pc	3-168-158-01	o	BRACKET (L), VO BOARD
3pcs	3-703-353-08	o	SUPPORTER, PC BOARD
2pcs	4-886-821-11	s	SCREW, S TIGHT, +PTTWH 3x6
C1	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C2	1-126-516-11	s	ELECT 120uF 20% 16V
C3	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C4	1-126-516-11	s	ELECT 120uF 20% 16V
C5	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C6	1-124-589-11	s	ELECT 47uF 20% 16V
C30	1-124-584-00	s	ELECT 100uF 20% 10V
C31	1-124-584-00	s	ELECT 100uF 20% 10V
C101	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C102	1-163-135-00	s	CERAMIC, CHIP 560pF 5% 50V
C103	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C104	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C105	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C106	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C107	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C108	1-124-234-00	s	ELECT 22uF 20% 16V
C109	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C110	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C111	1-124-257-00	s	ELECT 2.2uF 20% 50V
C112	1-126-163-11	s	ELECT 4.7uF 20% 50V
C113	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C114	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C115	1-126-924-11	s	ELECT 330uF 20% 10V
C116	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C117	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C118	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C119	1-124-589-11	s	ELECT 47uF 20% 16V
C120	1-124-257-00	s	ELECT 2.2uF 20% 50V
C121	1-124-589-11	s	ELECT 47uF 20% 16V
C122	1-126-163-11	s	ELECT 4.7uF 20% 50V
C123	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C125	1-163-136-00	s	CERAMIC, CHIP 620pF 1% 50V
C126	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C127	1-124-257-00	s	ELECT 2.2uF 20% 50V
C128	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C129	1-163-131-00	s	CERAMIC, CHIP 390pF 5% 50V
C130	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C131	1-163-263-11	s	CERAMIC, CHIP 330pF 5% 50V
C132	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C133	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C135	1-124-465-00	s	ELECT 0.47uF 20% 50V
C136	1-124-589-11	s	ELECT 47uF 20% 16V
C137	1-124-589-11	s	ELECT 47uF 20% 16V
C141	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C142	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C143	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C146	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C147	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C148	1-124-589-11	s	ELECT 47uF 20% 16V
C149	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V

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*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C151	1-124-589-11	s	ELECT 47uF 20% 16V
C152	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C153	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C154	1-124-589-11	s	ELECT 47uF 20% 16V
C155	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C156	1-163-257-11	s	CERAMIC, CHIP 180pF 5% 50V
C157	1-163-125-00	s	CERAMIC, CHIP 220pF 5% 50V
C158	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C160	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C161	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C162	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C163	1-163-245-11	s	CERAMIC, CHIP 56pF 5% 50V
C164	1-163-091-00	s	CERAMIC, CHIP 8pF 50V
C165	1-163-099-00	s	CERAMIC, CHIP 18pF 5% 50V
C167	1-163-113-00	s	CERAMIC, CHIP 68pF 5% 50V
C170	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C172	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C173	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C174	1-124-589-11	s	ELECT 47uF 20% 16V
C175	1-163-037-11	s	CERAMIC,. CHIP 0.022uF 10% 25V
C180	1-163-241-11	s	CERAMIC, CHIP 39pF 5% 50V
C181	1-163-235-11	s	CERAMIC, CHIP 22pF 5% 50V
C182	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C201	1-124-589-11	s	ELECT 47uF 20% 16V
C202	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C203	1-124-589-11	s	ELECT 47uF 20% 16V
C204	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C205	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C208	1-163-127-00	s	CERAMIC, CHIP 270pF 5% 50V
C209	1-163-112-00	s	CERAMIC, CHIP 62pF 5% 50V
C211	1-164-491-11	s	CERAMIC, CHIP 300pF 1% 50V
C213	1-124-589-11	s	ELECT 47uF 20% 16V
C214	1-126-163-11	s	ELECT 4.7uF 20% 50V
C215	1-126-163-11	s	ELECT 4.7uF 20% 50V
C216	1-124-589-11	s	ELECT 47uF 20% 16V
C218	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C219	1-124-589-11	s	ELECT 47uF 20% 16V
C220	1-124-589-11	s	ELECT 47uF 20% 16V
C221	1-124-589-11	s	ELECT 47uF 20% 16V
C222	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C223	1-124-589-11	s	ELECT 47uF 20% 16V
C224	1-124-589-11	s	ELECT 47uF 20% 16V
C226	1-124-589-11	s	ELECT 47uF 20% 16V
C227	1-163-097-00	s	CERAMIC, CHIP 15pF 5% 50V
C228	1-163-121-00	s	CERAMIC, CHIP 150pF 5% 50V
C230	1-124-589-11	s	ELECT 47uF 20% 16V
C231	1-126-163-11	s	ELECT 4.7uF 20% 50V
C232	1-163-115-00	s	CERAMIC, CHIP 82pF 5% 50V
C233	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C234	1-124-589-11	s	ELECT 47uF 20% 16V
C235	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C302	1-124-589-11	s	ELECT 47uF 20% 16V
C309	1-124-584-00	s	ELECT 100uF 20% 10V
C310	1-124-584-00	s	ELECT 100uF 20% 10V
C311	1-124-589-11	s	ELECT 47uF 20% 16V
C312	1-124-589-11	s	ELECT 47uF 20% 16V
C313	1-124-589-11	s	ELECT 47uF 20% 16V
C314	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C315	1-131-360-00	s	TANTALUM 15uF 10% 10V

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C315 *1	1-131-365-00	s	TANTALUM 10uF 20% 20V
C320	1-124-589-11	s	ELECT 47uF 20% 16V
C321	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C322	1-131-351-00	s	TANTALUM 4.7uF 10% 35V
C323	1-124-589-11	s	ELECT 47uF 20% 16V
C324	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C325	1-163-251-11	s	CERAMIC, CHIP 100pF 5% 50V
C326	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C327	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C330	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C331	1-124-589-11	s	ELECT 47uF 20% 16V
C332	1-126-163-11	s	ELECT 4.7uF 20% 50V
C333	1-163-133-00	s	CERAMIC, CHIP 470pF 5% 50V
C334	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C335	1-124-589-11	s	ELECT 47uF 20% 16V
C336	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C337	1-124-589-11	s	ELECT 47uF 20% 16V
C340	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C341	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C342	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C343	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C344	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C345	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C346	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C347	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C348	1-163-038-00	s	CERAMIC, CHIP 0.1uF 25V
C349	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C350	1-124-589-11	s	ELECT 47uF 20% 16V
C351	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C352	1-124-584-00	s	ELECT 100uF 20% 10V
C352 *1	1-124-589-11	s	ELECT 47uF 20% 16V
C353	1-124-584-00	s	ELECT 100uF 20% 10V
C353 *1	1-124-589-11	s	ELECT 47uF 20% 16V
C354	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C355	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C356	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C357	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C358	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C359	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C360	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C361	1-163-089-00	s	CERAMIC, CHIP 6pF 50V
C363	1-126-924-11	s	ELECT 330uF 20% 10V
C364	1-163-239-11	s	CERAMIC, CHIP 33pF 5% 50V
C365	1-163-237-11	s	CERAMIC, CHIP 27pF 5% 50V
C366	1-163-229-11	s	CERAMIC, CHIP 12pF 5% 50V
C370	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C371	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C380	1-124-584-00	s	ELECT 100uF 20% 10V
C381	1-124-584-00	s	ELECT 100uF 20% 10V
C383	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C384	1-124-589-11	s	ELECT 47uF 20% 16V
C385	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C386	1-124-589-11	s	ELECT 47uF 20% 16V
C390	1-124-589-11	s	ELECT 47uF 20% 16V
C391	1-124-589-11	s	ELECT 47uF 20% 16V
C402	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C407	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C408	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C410	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C411	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C413	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C417	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C420	1-124-584-00	s	ELECT 100uF 20% 10V
C422	1-124-584-00	s	ELECT 100uF 20% 10V
C422 *4	1-124-589-11	s	ELECT 47uF 20% 16V
C423	1-107-077-00	s	MICA 47pF 5% 50V
C425	1-124-589-11	s	ELECT 47uF 20% 16V
C426	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C429	1-124-589-11	s	ELECT 47uF 20% 16V
C430	1-124-589-11	s	ELECT 47uF 20% 16V
C431	1-164-222-11	s	CERAMIC, CHIP 0.22uF 25V
C432	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C433	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C434	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C435	1-126-157-11	s	ELECT 10uF 20% 16V
C436	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C440	1-126-157-11	s	ELECT 10uF 20% 16V
C441	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C450	1-163-227-11	s	CERAMIC, CHIP 10pF 5% 50V
C451	1-163-108-00	s	CERAMIC, CHIP 43pF 5% 50V
C452	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C453	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C454	1-163-037-11	s	CERAMIC, CHIP 0.022uF 10% 25V
C455	1-126-157-11	s	ELECT 10uF 20% 16V
C460	1-124-584-00	s	ELECT 100uF 20% 10V
C461	1-131-377-00	s	TANTALUM 10uF 10% 10V
C461 *1	1-131-349-00	s	TANTALUM 2.2uF 20% 35V
C471	1-124-584-00	s	ELECT 100uF 20% 10V
C472	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C473	1-124-589-11	s	ELECT 47uF 20% 16V
C480	1-124-589-11	s	ELECT 47uF 20% 16V
C481	1-124-257-00	s	ELECT 2.2uF 20% 50V
C482	1-124-584-00	s	ELECT 100uF 20% 10V
C483	1-124-584-00	s	ELECT 100uF 20% 10V
C488	1-124-584-00	s	ELECT 100uF 20% 10V
C489	1-126-926-11	s	ELECT 1000uF 20% 10V
C489 *1	1-126-916-11	s	ELECT 1000uF 20% 6.3V
C491	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C492	1-126-925-11	s	ELECT 470uF 20% 10V
C493	1-126-926-11	s	ELECT 1000uF 20% 10V
C493 *1	1-126-916-11	s	ELECT 1000uF 20% 6.3V
C494	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C495	1-163-087-00	s	CERAMIC, CHIP 4pF 50V
C496	1-163-035-00	s	CERAMIC, CHIP 0.047uF 50V
C497	1-126-157-11	s	ELECT 10uF 20% 16V
C498	1-124-584-00	s	ELECT 100uF 20% 10V
C499	1-126-926-11	s	ELECT 1000uF 20% 10V
C499 *1	1-126-916-11	s	ELECT 1000uF 20% 6.3V
CN201	1-506-471-11	s	CONNECTOR, 6P, MALE
CN203	1-506-475-11	s	CONNECTOR, 10P, MALE
CN211	1-562-992-11	o	CONNECTOR, FPC 26P, FEMALE
CN221	1-506-474-11	s	CONNECTOR, 9P, MALE
CN222	1-506-470-11	s	CONNECTOR, 5P, MALE
CN231	1-506-470-11	s	CONNECTOR, 5P, MALE
CN232	1-506-473-11	s	CONNECTOR, 8P, MALE
D10	8-719-400-18	s	DIODE MA152WK
D101	8-719-400-18	s	DIODE MA152WK

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D103	8-719-400-18	s	DIODE MA152WK
D130	8-719-911-19	s	DIODE 1SS119
D201	8-719-400-18	s	DIODE MA152WK
D202	8-719-400-18	s	DIODE MA152WK
D301	8-719-400-18	s	DIODE MA152WK
D401	8-719-911-19	s	DIODE 1SS119
DL201	1-415-677-11	s	DELAY LINE 370ns
DL301	1-415-559-11	s	DELAY LINE 600ns
FL101	1-236-911-11	s	FILTER, LOW-PASS 3.0MHz
FL201	1-236-716-11	s	FILTER, LOW-PASS 5.0MHz
FL301	1-239-085-11	s	FILTER, LOW-PASS 5.0MHz
FL302	1-239-085-11	s	FILTER, LOW-PASS 5.0MHz
IC1	8-759-520-06	s	IC XRA17809T
IC10	8-759-038-46	s	IC SC7S00F
IC101	8-759-420-64	s	IC AN3237FB
IC102	8-759-710-07	s	IC NJM2234M
IC201	8-759-710-07	s	IC NJM2234M
IC202	8-759-051-54	s	IC VC2076MP
IC203	8-759-710-86	s	IC NJM2233BM
IC302	8-759-710-86	s	IC NJM2233BM
IC303	8-752-334-55	s	IC CXD1175AM
IC304	8-752-342-61	s	IC CXD2105AQ
IC306	8-759-710-07	s	IC NJM2234M
IC402	8-759-710-07	s	IC NJM2234M
IC403	8-759-710-07	s	IC NJM2234M
IC405	8-759-710-07	s	IC NJM2234M
IC407	8-759-710-07	s	IC NJM2234M
IC440	8-759-206-29	s	IC TA7060AP-SONY
IC440 *3	8-759-925-60	s	IC BA401
IC441	8-759-206-29	s	IC TA7060AP-SONY
IC441 *3	8-759-925-60	s	IC BA401
IC442	8-752-039-13	s	IC CXA1413L
IC491	8-759-057-43	s	IC MC14576BF
IC492	8-759-057-40	s	IC MC14577BF
L1	1-410-482-31	s	INDUCTOR 100uH
L101	1-408-420-00	s	INDUCTOR 82uH
L102	1-410-482-31	s	INDUCTOR 100uH
L103	1-410-482-31	s	INDUCTOR 100uH
L105	1-408-416-00	s	INDUCTOR 39uH
L106	1-408-416-00	s	INDUCTOR 39uH
L108	1-410-473-11	s	INDUCTOR 18uH
L109	1-410-482-31	s	INDUCTOR 100uH
L110	1-410-482-31	s	INDUCTOR 100uH
L111	1-410-478-11	s	INDUCTOR 47uH
L112	1-408-416-00	s	INDUCTOR 39uH
L115	1-408-411-00	s	INDUCTOR 15uH
L116	1-408-411-00	s	INDUCTOR 15uH
L117	1-410-478-11	s	INDUCTOR 47uH
L118	1-410-482-31	s	INDUCTOR 100uH
L120	1-408-416-00	s	INDUCTOR 39uH
L121	1-408-423-00	s	INDUCTOR 150uH
L122	1-408-413-00	s	INDUCTOR 22uH
L201	1-410-482-31	s	INDUCTOR 100uH
L202	1-410-482-31	s	INDUCTOR 100uH
L301	1-410-482-31	s	INDUCTOR 100uH
L302	1-410-482-31	s	INDUCTOR 100uH
L310	1-410-482-31	s	INDUCTOR 100uH

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
L311	1-410-470-11	s	INDUCTOR 10uH
L312	1-410-471-11	s	INDUCTOR 12uH
L320	1-408-420-00	s	INDUCTOR 82uH
L440	1-408-423-00	s	INDUCTOR 150uH
L441	1-408-414-00	s	INDUCTOR 27uH
L444	1-410-482-31	s	INDUCTOR 100uH
L490	1-410-482-31	s	INDUCTOR 100uH
Q10	8-729-901-06	s	TRANSISTOR DTA144EK
Q11	8-729-216-22	s	TRANSISTOR 2SA1162
Q12	8-729-901-01	s	TRANSISTOR DTC144EK
Q13	8-729-901-01	s	TRANSISTOR DTC144EK
Q17	8-729-901-06	s	TRANSISTOR DTA144EK
Q19	8-729-901-06	s	TRANSISTOR DTA144EK
Q20	8-729-901-01	s	TRANSISTOR DTC144EK
Q21	8-729-901-01	s	TRANSISTOR DTC144EK
Q22	8-729-901-01	s	TRANSISTOR DTC144EK
Q30	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q31	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q32	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q40	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q41	8-729-202-38	s	TRANSISTOR 2SC3326N
Q101	8-729-901-01	s	TRANSISTOR DTC144EK
Q102	8-729-901-01	s	TRANSISTOR DTC144EK
Q103	8-729-901-01	s	TRANSISTOR DTC144EK
Q104	8-729-901-01	s	TRANSISTOR DTC144EK
Q105	8-729-901-01	s	TRANSISTOR DTC144EK
Q106	8-729-901-01	s	TRANSISTOR DTC144EK
Q107	8-729-901-01	s	TRANSISTOR DTC144EK
Q108	8-729-901-01	s	TRANSISTOR DTC144EK
Q109	8-729-901-01	s	TRANSISTOR DTC144EK
Q110	8-729-901-01	s	TRANSISTOR DTC144EK
Q111	8-729-901-01	s	TRANSISTOR DTC144EK
Q112	8-729-901-01	s	TRANSISTOR DTC144EK
Q120	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q121	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q122	8-729-216-22	s	TRANSISTOR 2SA1162
Q123	8-729-901-06	s	TRANSISTOR DTA144EK
Q124	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q125	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q126	8-729-216-22	s	TRANSISTOR 2SA1162
Q128	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q130	8-729-216-22	s	TRANSISTOR 2SA1162
Q131	8-729-901-06	s	TRANSISTOR DTA144EK
Q140	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q141	8-729-901-01	s	TRANSISTOR DTC144EK
Q150	8-729-900-89	s	TRANSISTOR DTC144ES
Q151	8-729-900-89	s	TRANSISTOR DTC144ES
Q201	8-729-901-01	s	TRANSISTOR DTC144EK
Q203	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q204	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q205	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q206	8-729-216-22	s	TRANSISTOR 2SA1162
Q207	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q208	8-729-216-22	s	TRANSISTOR 2SA1162
Q209	8-729-216-22	s	TRANSISTOR 2SA1162
Q304	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q305	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q306	8-729-230-49	s	TRANSISTOR 2SC2712YG

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q310	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q311	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q312	8-729-216-22	s	TRANSISTOR 2SA1162
Q313	8-729-901-01	s	TRANSISTOR DTC144EK
Q314	8-729-901-01	s	TRANSISTOR DTC144EK
Q320	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q323	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q324	8-729-216-22	s	TRANSISTOR 2SA1162
Q326	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q327	8-729-216-22	s	TRANSISTOR 2SA1162
Q328	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q329	8-729-216-22	s	TRANSISTOR 2SA1162
Q333	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q334	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q335	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q336	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q337	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q339	8-729-202-38	s	TRANSISTOR 2SC3326N
Q402	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q420	8-729-216-22	s	TRANSISTOR 2SA1162
Q421	8-729-216-22	s	TRANSISTOR 2SA1162
Q430	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q431	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q432	8-729-903-97	s	TRANSISTOR FMS1FE
Q433	8-729-903-97	s	TRANSISTOR FMS1FE
Q434	8-729-216-22	s	TRANSISTOR 2SA1162
Q435	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q438	8-729-216-22	s	TRANSISTOR 2SA1162
Q439	8-729-216-22	s	TRANSISTOR 2SA1162
Q440	8-729-216-22	s	TRANSISTOR 2SA1162
Q480	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q481	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q482	8-729-230-49	s	TRANSISTOR 2SC2712YG
Q483	8-729-230-49	s	TRANSISTOR 2SC2712YG
R10	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R11	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R12	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R13	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R20	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R21	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R22	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R30	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R31	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R32	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R33	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R34	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R35	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R36	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R37	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R41	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R42	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R43	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R50	1-216-295-00	s	METAL, CHIP 0-OHM
R101	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R102	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R103	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R104	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R105	1-216-091-00	s	METAL, CHIP 56K 5% 1/10W
R106	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R107	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R108	1-216-069-00	s	METAL, CHIP 6.8K 5% 1/10W
R109	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R110	1-216-638-11	s	METAL, CHIP 300 0.5% 1/10W
R111	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R112	1-216-115-00	s	METAL, CHIP 560K 5% 1/10W
R114	1-247-887-00	s	CARBON 220K 5% 1/4W
R115	1-216-129-00	s	METAL, CHIP 2.2M 5% 1/10W
R116	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R117	1-216-668-11	s	METAL, CHIP 5.1K 0.5% 1/10W
R118	1-216-667-11	s	METAL, CHIP 4.7K 0.5% 1/10W
R119	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R120	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R121	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R122	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R123	1-216-640-11	s	METAL, CHIP 360 0.5% 1/10W
R124	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R125	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R126	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R127	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R128	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R129	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R132	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R132 *1	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R133	DELETED.		
R133	1-249-423-11	s	CARBON 3.3K 5% 1/4W
R135	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R137	1-249-429-11	s	CARBON 10K 5% 1/4W
R139	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R141	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R145	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R146	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R155	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R156	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R157	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R158	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R159	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R160	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R161	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R162	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R163	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R164	1-216-295-00	s	METAL, CHIP 0-OHM
R165	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R166	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R168	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R169	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R170	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R171	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R172	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R173	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R174	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R175	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R176	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R177	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R178	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R179	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R182	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R183	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R184	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R185	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R186	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R187	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R188	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R190	1-249-429-11	s	CARBON 10K 5% 1/4W
R196	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R197	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R201	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R202	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R203	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R205	1-216-639-11	s	METAL, CHIP 330 0.5% 1/10W
R207	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R208	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R209	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R210	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R211	1-216-295-00	s	METAL, CHIP 0-OHM
R213	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R214	1-216-295-00	s	METAL, CHIP 0-OHM
R217	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R218	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R219	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R220	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R221	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R222	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R223	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R224	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R225	1-216-656-11	s	METAL, CHIP 1.6K 0.5% 1/10W
R226	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R227	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R228	1-216-071-00	s	METAL, CHIP 8.2K 5% 1/10W
R229	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R230	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R232	1-216-063-00	s	METAL, CHIP 3.9K 5% 1/10W
R235	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R250	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R251	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R252	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R253	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R254	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R255	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R256	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R257	1-216-039-00	s	METAL, CHIP 390 5% 1/10W
R258	1-216-642-11	s	METAL, CHIP 430 0.5% 1/10W
R259	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R260	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R300	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R300 *1	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R310	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R311	1-216-635-11	s	METAL, CHIP 220 0.5% 1/10W
R312	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R312 *1	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R313	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R314	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R314 *1	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R315	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R316	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R317	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R318	1-216-665-11	s	METAL, CHIP 3.9K 0.5% 1/10W
R319	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W

*1 SEREAL NO. 10001-10030
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*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R320	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R322	1-215-422-00	s	METAL 1.1K 1% 1/6W
R322 *1	NOT IN USE.		
R323	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R324	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R326	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R327	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R328	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R329	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R330	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R331	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R332	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R333	1-216-627-11	s	METAL, CHIP 100 0.5% 1/10W
R335	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R336	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R337	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R338	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R339	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R340	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R341	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R342	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R343	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R344	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R345	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R346	1-216-067-00	s	METAL, CHIP 5.6K 5% 1/10W
R348	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R349	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R350	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R351	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R352	1-216-033-00	s	METAL, CHIP 220 5% 1/10W
R353	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R354	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R355	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R356	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R357	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R358	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R360	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R361	1-216-035-00	s	METAL, CHIP 270 5% 1/10W
R362	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R363	1-216-669-11	s	METAL, CHIP 5.6K 0.5% 1/10W
R364	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R366	1-216-650-11	s	METAL, CHIP 910 0.5% 1/10W
R367	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R368	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R369	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R374	1-216-643-11	s	METAL, CHIP 470 0.5% 1/10W
R375	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R376	1-216-657-11	s	METAL, CHIP 1.8K 0.5% 1/10W
R377	1-216-646-11	s	METAL, CHIP 620 0.5% 1/10W
R378	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R379	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R380	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R381	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R382	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R383	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R384	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R385	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R393	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R394	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R395	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R396	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R397	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R398	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R399	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R400	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R401	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R406	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R407	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R408	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R410	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R411	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R416	1-216-295-00	s	METAL, CHIP 0-OHM
R421	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R422	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R423	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R424	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R425	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R426	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R431	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R432	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R433	1-216-295-00	s	METAL, CHIP 0-OHM
R440	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R441	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R442	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R443	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R444	1-216-043-00	s	METAL, CHIP 560 5% 1/10W
R445	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R446	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R447	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R448	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R449	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R450	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R451	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R452	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R453	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R454	1-216-655-11	s	METAL, CHIP 1.5K 0.5% 1/10W
R455	1-216-647-11	s	METAL, CHIP 680 0.5% 1/10W
R456	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R457	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R458	1-216-645-11	s	METAL, CHIP 560 0.5% 1/10W
R459	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R460	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R461	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R462	1-216-659-11	s	METAL, CHIP 2.2K 0.5% 1/10W
R466	1-216-663-11	s	METAL, CHIP 3.3K 0.5% 1/10W
R467	1-216-648-11	s	METAL, CHIP 750 0.5% 1/10W
R467 *1	1-216-649-11	s	METAL, CHIP 820 0.5% 1/10W
R468	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R469	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R470	1-216-651-11	s	METAL, CHIP 1K 0.5% 1/10W
R470 *1	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R471	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R472	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R473	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R474	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R475	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R476	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R477	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W

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*5 SERIAL NO. 10001-10680

(VO-37C BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R478	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R479	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R480	1-216-055-00	s	METAL, CHIP 1.8K 5% 1/10W
R481	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R482	1-216-041-00	s	METAL, CHIP 470 5% 1/10W
R483	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R484	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R485	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R486	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R487	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R488	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R489	1-215-441-00	s	METAL 6.8K 1% 1/6W
R490	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R491	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R492	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R493	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R494	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R495	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R496	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R497	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R498	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
R499	1-216-624-11	s	METAL, CHIP 75 0.5% 1/10W
RV30	1-238-012-11	s	RES, ADJ CARBON 1K
RV101	1-238-015-11	s	RES, ADJ CARBON 4.7K
RV105	1-238-012-11	s	RES, ADJ CARBON 1K
RV106	1-238-017-11	s	RES, ADJ CARBON 22K
RV202	1-238-011-11	s	RES, ADJ CARBON 470
RV310	1-241-629-11	s	RES, ADJ CARBON 4.7K
RV401	1-238-012-11	s	RES, ADJ CARBON 1K
RV402	1-238-012-11	s	RES, ADJ CARBON 1K
RV480	1-238-012-11	s	RES, ADJ CARBON 1K
RV481	1-238-013-11	s	RES, ADJ CARBON 2.2K
RV482	1-238-013-11	s	RES, ADJ CARBON 2.2K

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-413-730-11	s	SWITCHING REGULATOR ZSSP067HA
1pc	1-464-801-12	s	ENCODER, ROTARY
1pcs	⚠1-532-203-11	s	FUSE T2A 250V "AC-148 BOARD"
1pc	1-590-308-11	o	WIRE, FLEXIBLE CARD 20P
1pc	1-690-613-11	o	WIRE, FLEXIBLE CARD 26P
1pc	1-690-614-12	o	WIRE, FLEXIBLE CARD 28P
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE "AC IN"
CN1002	1-507-743-21	s	JACK, STEREO MINIATURE
CS1001	1-806-682-91	s	SENSOR, DEW CONDENSATION (with harness)
H1001	X-3165-588-1	o	HEAD ASSY, ACE
H1002	8-848-578-12	s	DRUM ASSY DZH-41A-R
	8-848-579-02	s	UPPER DRUM ASSY DZR-41-R
M904	X-3727-784-1	s	MOTOR ASSY(includes CM-14 board) "CASSETTE COMPARTMENT"
M1002	8-835-480-02	s	MOTOR, DC SCV-0401A "CAPSTAN"
M1003	8-835-432-01	s	MOTOR, DC SRV-0201A "T-REEL"
M1004	8-835-432-01	s	MOTOR, DC SRV-0201A "S-REEL"
M1005	X-3165-593-3	o	MOTOR ASSY, CAM "LOADING"
PM1001	1-454-531-11	s	SOLENOID, PLUNGER (with harness) "BRAKE"
PM1002	1-454-434-21	s	SOLENOID, PLUNGER (with harness) "PINCH"
PM1003	1-454-334-71	s	SOLENOID, PLUNGER (with harness) "T-BRAKE"
S1001	1-571-099-11	s	SWITCH, MICRO "CASSETTE DOWN"
S1002	1-570-771-11	s	SWITCH, MICRO "MISS REC"
S1003	1-571-099-11	s	SWITCH, MICRO "VHS CASSETTE"
S1004	⚠1-570-117-41	s	SWITCH, ROCKER (AC POWER) "POWER"

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*5 SERIAL NO. 10001-10680

HARNESS'S CHILD PARTS

HARNESS(A-HEAD):CN315,316/AU-179C board to CN616/AH-28 borad

Ref. No. or Q'ty	Part No.	SP	Description
CN315F	1-569-196-21	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN316F	1-569-196-41	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN616F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AC INLET): to CN903/AC-148 board

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-535-316-11	o	TERMINAL, GROUND (M4)
CN903F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	s	CONTACT, FEMALE, AWG18-22
CN1001	⚠1-580-375-11	s	INLET, AC 3P, MALE
1pc	4-605-946-01	o	COVER, AC INLET

HARNESS(AU CONT):CN142/SS-49E board to CN311/AU-179C board

Unstock part

HARNESS(AU MONITOR):CN307/AU-179C board to CN151/SW-574 board and CN603/SW-514C board

Ref. No. or Q'ty	Part No.	SP	Description
CN151F	1-569-197-11	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN603F	1-569-197-21	o	HOUSING, 4P
CN307F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU OUT 1):CN310/AU-179C board to CN502/CP-223 board

Ref. No. or Q'ty	Part No.	SP	Description
CN310F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN502F	1-569-202-21	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU OUT 2):CN317/AU-179C board to CN507/CP-223 board

Ref. No. or Q'ty	Part No.	SP	Description
CN317F	1-569-199-31	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN507F	1-569-199-31	o	HOUSING, 6P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(AU REG):CN140/SS-49E board to CN313/AU-179C board

Unstock part

(HARNESS'S CHILD PARTS)

HARNESS(CAPSTAN):CN632/DR-176A board to CN603/CAPSTAN motor

Ref. No. or Q'ty	Part No.	SP	Description
CN632F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN603F	1-569-202-11	o	HOUSING, 9P
8pcs	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
1pc	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CASSECON):CN105/SS-49E board to CN001/CM-14 board

Unstock part

HARNESS(CNR):CN222/VO-37C board to CN302/NR-40A board

Ref. No. or Q'ty	Part No.	SP	Description
CN222F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN302F	1-569-198-41	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CONTROL-S):CN152/KY-229C board to CONTROL-S

Ref. No. or Q'ty	Part No.	SP	Description
CN152F	1-569-196-21	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CR-NR):CN102/NR-40A board to CN214/CR-42 board

Ref. No. or Q'ty	Part No.	SP	Description
CN102F	1-569-205-11	o	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN214F	1-569-205-11	s	HOUSING, 12P
12pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(CTL):CN107/SS-49E board to CN618/AH-28 board

Ref. No. or Q'ty	Part No.	SP	Description
CN107F	1-569-196-11	o	HOUSING, 3P
3pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN618F	1-569-195-11	s	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(DRUM):CN634/DR-167 board to CN604/DRUM motor

Ref. No. or Q'ty	Part No.	SP	Description
CN634	1-562-748-11	o	HOUSING, BOARD-IN 15P
15pcs	1-564-832-11	o	CONTACT, MALE
CN604F	1-580-938-11	o	HOUSING, 15P
15pcs	1-565-740-11	o	CONTACT, FEMALE

HARNESS(HEADPHONE):CN306/AU-179C board to CN651/HP-56 board

Unstock part

HARNESS(HN VM 1):CN731/HN-182 board to CN710 /VM-13(OPTION) board

Unstock part

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(HARNESS'S CHILD PARTS)

Ref. No.
or Q'ty Part No. SP Description

HARNESS(HN VM 2):CN730/HN-182 board to CN711 /VM-13(OPTION) board

Unstock part

HARNESS(IF):CN556/OPTION board to CN561/SW-530(OPTION)board

Unstock part

HARNESS(KY):CN111/SS-49E board to CN151/KY-229C board

Unstock part

HARNESS(KY-SW):CN159/KY-229C board to CN167/SW-574 board

Unstock part

HARNESS(KY-SW 1):CN153/KY-229C board to CN602/SW-514C board

Unstock part

HARNESS(KY-SW 2):CN117/SS-49E board to CN157/KY-229C board

Unstock part

HARNESS(LD MOTOR):CN106/SS-49E board to CN620/LD-35 board

Ref. No. or Q'ty	Part No.	SP	Description
CN106	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-831-11	s	CONTACT, MALE
CN620F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(LS SENSOR):CN635/DR-167 board to CN610/SE-151 board

Ref. No. or Q'ty	Part No.	SP	Description
CN635	1-562-735-11	o	HOUSING, BOARD-IN 2P
2pcs	1-564-832-11	o	CONTACT, MALE
CN610F	1-569-195-11	o	HOUSING, 2P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(NR-PB):CN101/NR-40A board to CN221/VO-37C board

Ref. No. or Q'ty	Part No.	SP	Description
CN101F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN221F	1-569-202-11	o	HOUSING, 9P
9pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(OPTION 1):CN114/SS-49E board to CN551/OPTION board

Unstock part

HARNESS(OPTION 2):CN110/SS-49E board to CN552/OPTION board

Unstock part

(HARNESS'S CHILD PARTS)

Ref. No.
or Q'ty Part No. SP Description

HARNESS(OPTION 3):CN508/CP-223 board to CN555/OPTION board

Unstock part

HARNESS(OPTION 4):CN312/AU-179C board to CN554/OPTION board

Unstock part

HARNESS(OPTION 5):CN112/SS-49E board to CN568/OPTION board

Unstock part

HARNESS(OPTION 7):CN103/nr-40A board to CN560/OPTION board

Unstock part

HARNESS(POWER SW):CN901/SW REG to CN904/AC-148 board

Ref. No. or Q'ty	Part No.	SP	Description
CN901F	⚠1-562-211-11	o	HOUSING, VH 3P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
CN904F	⚠1-562-285-11	o	HOUSING, VH 4P
2pcs	⚠1-562-210-11	o	CONTACT, FEMALE, AWG18-22
S1004	⚠1-570-117-41	s	SWITCH, PUSH (AC POWER)
1pc	2-269-962-00	o	COVER, SWITCH

HARNESS(RP-AU):CN308/AU-179C board to CN805/RP-62E board

Ref. No. or Q'ty	Part No.	SP	Description
CN308F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN805F	1-569-199-31	o	HOUSING, 6P
1pc	1-569-191-11	o	CONTACT, FEMALE, AWG22-26
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP-CONT):CN132/SS-49E board to CN803/RP-62E board

Ref. No. or Q'ty	Part No.	SP	Description
CN132F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN803F	1-569-199-41	o	HOUSING, 6P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP-FSC):CN206/VO-37C board to CN806/RP-62E board

Ref. No. or Q'ty	Part No.	SP	Description
CN206	1-562-738-11	o	HOUSING, BOARD-IN 5P
5pcs	1-564-831-11	o	CONTACT, MALE
CN806F	1-569-198-11	o	HOUSING, 5P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP-PB):CN202/VO-37C board to CN802/RP-62E board

Ref. No. or Q'ty	Part No.	SP	Description
CN202	1-569-740-11	s	HOUSING, BOARD-IN 7P
7pcs	1-564-831-11	o	CONTACT, MALE
CN802F	1-569-200-11	o	HOUSING, 7P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(HARNESS'S CHILD PARTS)

HARNESS(RP REC):CN207/VO-37C board to CN807/RP-62E board

Ref. No. or Q'ty	Part No.	SP	Description
CN207	1-569-739-11	s	HOUSING, BOARD-IN 6P
6pcs	1-564-831-11	o	CONTACT, MALE
CN807F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(RP VO):CN208/VO-37C board to CN808/RP-62E board

Ref. No. or Q'ty	Part No.	SP	Description
CN208	1-562-736-11	o	HOUSING, BOARD-IN 3P
3pcs	1-564-831-11	o	CONTACT, MALE
CN808F	1-569-196-11	o	HOUSING, 3P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(S-DR 1):CN1/DR-153(b) board to CN1/S-REEL motor

Unstock part

HARNESS(S-DR 2):CN2/DR-153(b) board to CN2/S-REEL motor

Unstock part

HARNESS(S-REEL):CN123/SS-49E board to CN3/DR-153(b) board

Unstock part

HARNESS(S-TEN):CN657/HN-160 board to LE-86 & SE-159 boards

Ref. No. or Q'ty	Part No.	SP	Description
CN316F	1-569-196-41	o	HOUSING, 3P
5pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SEARCH):CN154/KY-229C board to ROTARY ENCODER (SEARCH DIAL)

Ref. No. or Q'ty	Part No.	SP	Description
CN154F	1-569-199-11	o	HOUSING, 6P
6pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SS-CP):CN116/SS-49E board to CN503/CP-223 board

Ref. No. or Q'ty	Part No.	SP	Description
CN116F	1-569-206-11	o	HOUSING, 13P
7pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(SS-CR):CN133/SS-49E board to CN213/NR-40A board

Unstock part

HARNESS(SS REG):CN100/SS-49E board to CN902/SW REG

Ref. No. or Q'ty	Part No.	SP	Description
CN100F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-11	o	CONTACT, FEMALE
CN902F	1-561-992-11	o	HOUSING, 11P
11pcs	1-560-901-11	o	CONTACT, FEMALE

(HARNESS'S CHILD PARTS)

HARNESS(SV-OUT):CN232/VO-37C board to CN505/CP-223

Ref. No. or Q'ty	Part No.	SP	Description
CN232F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE AWG24-30
CN505F	1-569-201-21	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE AWG24-30

HARNESS(SW-1):CN102/SS-49E board to CN658/HN-160 board

Unstock part

HARNESS(SW-2):CN103/SS-49E board to CN655/HN-160 board

Unstock part

HARNESS(T-BRAKE C):DR-167 board to CN1/DUS-544 board

Ref. No. or Q'ty	Part No.	SP	Description
CN1F	1-569-195-11	o	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(T-DR 1):CN1/DR-153(a) board to CN1/T-REEL motor

Unstock part

HARNESS(T-DR 2):CN2/DR-153(a) board to CN2/T-REEL motor

Unstock part

HARNESS(T-REEL):CN124/SS-49E board to CN3/DR-153(a) board

Unstock part

HARNESS(T-TOP):CN651/HN-160 board to SE-152 board

Ref. No. or Q'ty	Part No.	SP	Description
CN651F	1-569-195-11	s	HOUSING, 2P
2pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(TC):CN557/OPTION board to CN562/SW-531(OPTION) board

Unstock part

HARNESS(TIMER):CN158/KY-229C board to CN171/SW-532A board

Unstock part

HARNESS(VM NR 1):CN201/NR-40A board to CN701/VM-13(OPTION) board

Ref. No. or Q'ty	Part No.	SP	Description
CN201F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN701F	1-569-201-11	o	HOUSING, 8P
8pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680

(HARNESS'S CHILD PARTS)

Ref. No. or Q'ty	Part No.	SP	Description

HARNESS(VM NR 2):CN301/NR-40A board to CN702/VM-13(OPTION) board

Ref. No. or Q'ty	Part No.	SP	Description
CN301F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30
CN702F	1-569-197-41	o	HOUSING, 4P
4pcs	1-569-193-11	o	CONTACT, FEMALE, AWG24-30

HARNESS(VO CONT):CN203/VO-37C board to CN131/SS-49E board

Unstock part

HARNESS(VO REG):CN201/VO-37C board to CN130/SS-49E board

Unstock part

15-4. PACKING MATERIAL AND ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-590-910-11	s	CORD, POWER 3P(EK)
1pc	3-177-005-01	o	INDIVIDUAL CARTON
1pc	3-176-268-01	o	CUSHION (UPPER)
1pc	3-176-269-01	o	CUSHION (LOWER)
1pc	3-694-922-01	o	SHEET, PROTECTION
1pc	⚠3-755-205-42	s	MANUAL, INSTRUCTION(E,F)
1pc	3-755-205-52	s	MANUAL, INSTRUCTION(B,I)
1pc	3-795-581-21	o	SAFEGUARD (SONY), IMPORTANT

15-5. OPTIONAL FIXTURES

Part No.	SP	Description
H-7099-035-H	o	TORQUE GAUGE ADAPTOR
H-7099-039-H	o	TORQUE GAUGE
H-7099-052-H	o	ALIGNMENT TAPE, JVC-MH-2(PAL)
J-6080-811-A	o	GUIDE HEIGHT ADJ. DRIVER
or		
J-6082-044-A	o	GUIDE HEIGHT ADJ. DRIVER
J-6080-840-A	o	SMALL MIRROR
J-6090-014-A	o	MOLYCOTE GREASE EM-30LG
or		
4-918-645-01	o	MOLYCOTE GREASE EM-30L
J-6380-040-A	o	RG REFERENCE PIN (1)
J-6380-050-A	o	RG REFERENCE PIN (2)
J-6380-080-A	o	REFERENCE PLATE
J-6380-090-A	o	REEL TABLE HEIGHT ADJ. TOOL
J-6380-550-A	o	MASTER BLOCK
J-6380-700-A	o	MASTER BLOCK
J-6380-710-A	o	X VALUE ADJUSTMENT TOOL
J-6381-370-A	o	RP EXTENSION TOOL
J-6381-380-A	o	S-BNC VIDEO CABLE
J-6381-900-A	o	Y/C DELAY ADJUSTMENT TOOL
2-034-697-00	o	CLEANING CLOTH
7-700-736-05	o	L-SHAPED HEXAGONAL WRENCH(1.5mm)
7-700-736-06	o	L-SHAPED HEXAGONAL WRENCH(0.89mm)
7-700-751-02	o	BOX DRIVER(5.5mm)
8-192-602-48	o	ALIGNMENT TAPE, KRV-4821PSA
8-192-603-96	o	ALIGNMENT TAPE, KRV-39PF
8-192-603-51	o	ALIGNMENT TAPE, KRV-35NF
8-192-605-21	o	ALIGNMENT TAPE, KRV-51HN(S-VHS)
- Pending -	o	ALIGNMENT TAPE, KRV-45HPS(S-VHS)
- Pending -	o	ALIGNMENT TAPE, KRV-45PS(VHS)
8-896-024-94	o	BLANK TAPE, GR-120KG
9-911-053-00	o	THICKNESS GAUGE
9-919-573-01	o	CLEANING FLUID
COMMERCIALLY SOLD		TENTELOMETER, T2-H7-UMC HEAD DEGAUSSER

*1 SEREAL NO. 10001-10030
*2 SERIAL NO. 10001-10230
*3 SERIAL NO. 10001-10380
*4 SERIAL NO. 10001-10580
*5 SERIAL NO. 10001-10680